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MARCH - APRIL, 1956

Volume 10

Number 2

Published Bimonthly by the Association for Physical and Mental Rehabilitation 1472 Broadway New York 36, N. Y. Tel. BRyant 9-9642 in this issue

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Subscriptions to libraries and organizations \$5.00 Foreign \$5.50

Single Copies \$1.00

Address all requests for subscriptions to: Edward F. Mecchella, Circulation Manager, Box 178, Montrose, N. Y.

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Send all manuscripts to the Editor, Box 178, Montrose, N. Y.

REPRINTS: Should be ordered when manuscript is submitted. They may be purchased at the following prices:

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# USE OF THE KITCHEN CHAIR IN THE CORRECTIVE THERAPY HOME EXERCISE PROGRAM\*

EVERETT M. SANDERS, M.A.\*\*

PAUL B. BELL, C.C.T.\*\*\*

The Problem

One of the many unsolved problems of rehabilitation is to find a satisfactory method of getting both the patient and the home folks to realize that a paralysis of any degree will eventually produce contractures and limitation of motion. Exercise is frequently the only means available in the home to prevent this condition from developing. Too frequently such a common piece of household equipment as the kitchen chair used as therapeutic equipment is overlooked. Most patients think only of the type of apparatus so liberally supplied in hospital physical medicine services and rehabilitation centers and become discouraged, permitting an atrophy of disuse to increase their disabilities or keep them in status quo.

#### A Possible Solution

Sometime during the patient's treatment in the corrective therapy section both he and the family should become acquainted with the possibilities of using the kitchen chair in lieu of the apparatus he used during his convalescence. Few patients fail to introduce their parents or the other home folks to the corrective therapy personnel and equipment, for this is where patient and therapist have had many profitable and happy times together. During these visits the therapist has a golden opportunity to show these possibilities to the home folks. Even a temporary interruption of schedule is in order and on the first of such visits some of the possibilities should be demonstrated. One session is inadequate unless a sheet of instructions has been prepared at one of the in-service training sessions where this problem has been given attention. Usually enough interest can be developed so that in the absence of the home folks, the patient's treatment following the visit can become an emphasis on the home treatment.

Uses

Taken singly or in a pair, the straight back kitchen chair has many uses. It can be moved to any part of the home. It is easily taken to the sunny back yard or porch. It is always at hand. It is an inexpensive piece of equipment.

Two chairs with backs facing the sides of the patient may be used as a walking frame. They may be used as parallel bars when stabilized by a floor cleat against the front legs of one chair with the front legs of the other against the junction of wall and floor.

The single chair may be used for a variety of sitting exercises for general reconditioning, particularly of the trunk. The single chair may be used for exercises commonly performed when astride a plinth. A single chair may be used as a stall bar.

#### For Patients With Hemiplegia

To add interest to the bed exercise program, a single chair may be placed beside the bed with the back of the chair against the bed within easy reach of the arm that has retained normal motion and power. The patient then moves to a standing position near the chair. The chair will be at the patient's right, if the right side of the body has retained normal patterns of movement. If normal movement remains in the left side, the chair will be on the opposite side of the bed and at the patient's left side. If the patient has reached the weight bearing stage on the affected leg it is easy for him to practice sitting in the chair and rising from it. If he has not acquired weight bearing confidence on the weak side, it will be necessary for the therapist to see that the patient's weak knee is kept locked in extension. This is readily accomplished by applying pressure just below the patella. The therapist, or member of the family who will assist the patient with his home exercises, can apply this pressure by placing his knee against that of the patient just below the patella. (Fig. 1). When this is necessary, there is evidence that the quadriceps has insufficient strength to keep the knee in extension. Exercises forcing the use of the quadriceps into the normal pattern of movement can be given from the

<sup>\*</sup>Presented at the 9th Annual Convention of the Association for Physical and Mental Rehabilitation, Boston, Mass., July 1, 1955.

<sup>\*\*</sup>Editor Emeritus, Journal of the Association for Physical and Mental Rehabilitation.

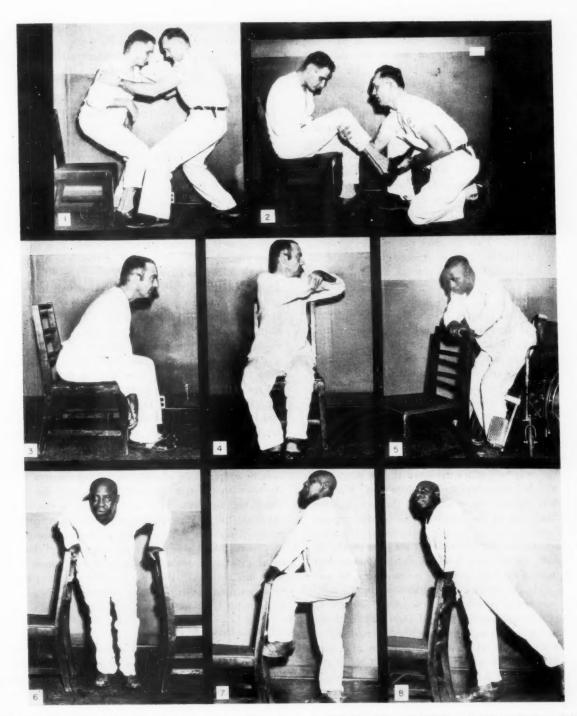
<sup>\*\*\*</sup>Chief, Corrective Therapy, Veterans Administration Medical Teaching Group Hospital, Memphis, Tenn.

chair. They should be given in addition to those in use in the bed routine. One exercise that is both simple and essential is to ask the patient, as he sits tall in the chair, to alternately raise the knees toward the chest. In the beginning this movement may be difficult, if not impossible, depending upon the severity of the paralysis. When this amount of muscle power is lacking the therapist should assist the patient as he attempts lifting the weak leg. In assisting, the therapist places one hand under the knee, the other grasping the ball of the foot. The greatest pressure is on the ball of the foot, forcing it upward and backward so that a slight tension is exerted on the quadriceps. (Fig. 2). This makes use of the stretch reflex principle. This fundamental movement needs to be reestablished early as it uses muscles that are active in the hip joint and in the pattern of walking.

The next exercise to use while the patient is still sitting in the chair is to extend the knee alternately. raising the foot from the floor. This should be done rhythmically. This exercise not only activates and strengthens the quadriceps; it also strengthens the abdominals and lateral trunk muscles as well as the iliopsoas. When the patient experiences difficulty performing this exercise, see that his position on the chair seat is well to the front. If he still has difficulty, have him place his knees and heels together and extend both knees simultaneously. He should be urged to get the feeling of pressing his knees and heels together, to get the advantage of cross-transfer. When the patient can accomplish this movement without assistance, have him assume the extended position of the legs and while holding them in extension, teach him to flex and extend the ankles. For patients unable to perform dorsi-flexion with knees extended, it is probable that a drop foot brace will be prescribed. After repeating this exercise with each leg, have patient extend both knees and flex and extend ankles reciprocally, i.e., when the left ankle is extended, the right is flexed. If the heels are kept in contact, there is a better chance of dorsi-flexion and extension being accomplished. The patient should now be sufficiently "warmed up" to practice standing in front of the chair, without help, when possible. To stand easily and safely without assistance, it is essential for the patient to sit well forward on the chair seat. The feet should be placed so that the heels are against the front legs of the chair. In this position the patient's center of gravity is well over the base of support. Standing is more easily accomplished if the patient leans forward at the hips. This puts tension on the two joint muscles of the thigh and uses the principle of the stretch reflex through stimulation of the proprioceptors. When the affected arm cannot be controlled sufficiently to place it on the knee, the patient should place the paralyzed hand on the opposite knee; hold it there and stand. This position has a tendency to transfer weight to the foot of the affected side. Many patients, for fear of falling, do not trust the paralyzed side with weight bearing, as the leg feels as if it were asleep; the sensation being similar to that felt by a normal leg when circulation has been reduced by the pressure of crossing the legs and sitting in that position for too long a period. After a short rest, the following exercises in the chair are effective: Have the patient sit well back in the chair. See that the feet are flat on the floor and the heels against the front legs of the chair. From this position have him bend forward and touch the floor in front of the chair. When he returns to the upright position, insist that he raise the head first; bring the shoulders together flattening the dorsal curve of the spine and continue to move to the upright position until the shoulders rest against the back of the chair. (Fig. 3). This exercise will tend to equalize the pull of the sacrospinalis and latissimus dorsi muscles on both sides of the vertebral column. The sooner this movement can be started, the less likelihood there will be of the drooping shoulder and overdevelopment or contracture of the sacrospinalis on the affected side. As this movement becomes easier for the patient, the therapist should resist the patient's effort to straighten the spine. If the patient is prone to elevate the chin in his movement, he should be taught to keep the chin in by tightening the neck flexor muscles. Another effective exercise performed while seated in the chair is trunk turning or rotation. It is well to have the patient support the arm of the affected side by grasping the elbow and moving the forearm of the paralyzed arm to a supported position on the forearm of the normal arm. The elbows are then raised to shoulder level. From this position the trunk is turned first to one side then the other. (Fig. 4). After a sufficient number of repetitions and a short rest period, the same arm position should be resumed and the trunk bent from one side to the other.

#### Exercises in Standing Position

As the patient becomes stronger the use of two chairs will make him more independent. Those patients who seek discharge from the hospital as soon as medical care is completed, will profit in the use of two common chairs serving as parallel bars or a walking frame. The first effort of the patient should be to place the chairs in position in front of his wheel chair. This is not a simple task if the patient has a severely paralyzed arm. He will need to move to the front of the wheel chair; bend forward and raise the foot rests of his chair. He then places the feet flat on the floor. From this position he maneuvers the chair



- Standing from chair with assistance (note position of therapist's knee).
- Hip and knee flexion (note assistive position of therapist's hands with pressure on ball of foot).
- Trunk extension (chin should be depressed on chest to a degree not well depicted here).
- 4. Trunk rotation, affected arm supported by normal arm.
- Standing from wheelchair, affected hand supported on chair back by normal hand.
- Knee bends, heels flat on floor to produce stretch of heel cord.
- Alternate hip and knee flexion with as little outward rotation as possible.
- Hip extension (a more vertical position of the trunk is desired than that depicted).

on the side of the normal arm into position in front of him. He then places the affected hand on the chair, holding the hand in position on the back of the chair while he rises to a standing position. (Fig.5). He then maneuvers the other chair into position, so that he is standing between the chairs with the back of each at his sides. In this position he begins shifting his weight from one foot to the other in the rhythmical pattern of walking. After establishing a feeling of security on the affected leg, he begins raising each foot in alternation. This is followed by a slight knee bend to unlock the knees. He then straightens and locks the knees. This is repeated to get the feel of controlled knee flexion. This is followed by bending both knees as far as possible with both heels remaining on the floor. This stretches the muscles attached to the tendo Achillis. (Fig. 6). A more effective stretching can be accomplished by placing a board or two books under the balls of the feet, and after instructing the patient to lock the knees, have him lean forward from the ankles. Instruct him to keep the hips forward so that there is good postural alignment from head to heels. He should then be ready to place the affected foot forward. With the feet in this position he shifts the weight forward and backward, raising the heel of the rear foot and the toes of the forward foot in a rocking motion. When the foot of the affected side is forward, the patient will experience some difficulty in raising the toes. To assist him in this movement, see that he keeps the knee in the locked position. When the patient is unable to perform this movement we have more evidence that a drop foot brace will be prescribed by the physician. The patient then changes the position of the feet, placing the normal foot in the forward position and repeats the rocking movement. Taking a step forward is next. The first step should be made on the foot of the affected side. After taking a step with the normal foot he has moved forward so that if he continues, he will have to slide the chairs to a position in front of him. When this is not practical because of the severity of the paralysis, the patient should step back between the chairs, but it is well to move the affected leg to position beside the one with full patterns of movement. He then starts stepping backward with the affected foot. This is continued until the patient is comfortably fatigued. All exercises that can be performed by the patient with hemiplegia between the parallel bars can be adapted to the two chairs. Many feel that sliding two chairs forward along the kitchen floor establishes confidence and rhythm in walking, better than too early use of the cane. As the two chairs serve to simulate exercises in parallel bars or walking frame, a single chair may serve as a stall or wall bar as it is sometimes called.

Exercises Simulating Activities At Stall Bars

The movement of raising the knee or flexing the thigh, which occurs in the normal pattern of walking, is difficult for many patients with hemiplegia. Most kitchen chairs have rungs or cross bars at the back. The height of the rung is approximately the height of the first cross bar of the stall bars or the riser of stairs. With the patient grasping the back of the chair with both hands, (holding the affected hand in position when necessary) he places the foot alternately on the rung of the chair. This should be made a rhythmical exercise as soon as possible. If our patient happens to be aphasic and is having difficulty with speech, invite him to count as he does the exercise. It is best to use a four count sequence. As this movement is mastered have the patient raise the foot high enough to touch the seat of the chair. (Fig. 7). This is a slower movement. To accomplish it, the thigh should be rotated outward. This will bring the sartorious into action to help the weakened quadriceps and iliopsoas accomplish hip flexion. Some will object to this movement as substitution of muscles not involved in the normal pattern of hip flexion, but in the early stages of the hemiplegic's rehabilitation it is necessary to stimulate as many muscle groups in acceptable patterns of movement as possible. This exercise may be followed by heel raising and knee flexion. Again we have a four count movement. More stretching of the gastrocnemius, soleus and plantaris may be done, by bending the knees with both heels remaining on the floor. The knee flexors may be exercised by alternately raising the feet from the floor to the rear, in an effort to have the heels touch the buttocks. This will produce a stretching effect on the quadriceps and activate the hamstring group of muscles. Alternate leg raising sideward and to the rear will strengthen the gluteal and lateral trunk muscles, provided the terminal position is held for a brief interval.1 (Fig. 8). For some of the younger patients with this disability running in place may be attempted.

#### Adapt Exercises to Patient

As in all rehabilitation, the best exercise for one patient may not be best for the other. The whole personality of the individual must be considered in selecting activities that will give the patient a feeling of security and independence. The corrective therapist is constantly facing this challenge to his initiative and inventiveness. The corrective therapist is frequently one of the services working with the patient with hemiplegia during the final stages of his rehabilitation.

McCLOY, C. H., Something New Has Been Added, Journal of the Association for Physical and Mental Rehabilitation, 9:1:3, Jan. - Feb., 1955.

He (the therapist) has a fine opportunity to point out the importance of health maintenance and the continuing of the exercises the patient has learned.

Chair Useful In Many Types of Disability

In this paper specific exercises using the kitchen chair have been described for patients with hemiplegia, but patients with arthritis, multiple sclerosis and the A/K and B/K amputees may use many of the exercises indicated with comparable benefits. When treating patients with arthritis, the selection of those exercises without weight bearing will be beneficial in the beginning. If stretching exercises seem to be indicated they will be most beneficial when tolerated without excessive pain. In selecting the chair exercises best suited to the patient with multiple sclerosis an emphasis on fascia stretching and the reduction of the developing contractures should be made as well as keeping strength and coordination exercises in the program. Using the two chairs to take the place of the walking frame will be of value in both of these disabilities. It will be possible to work out a routine for the A/K and B/K amputee using the single chair to give the same kind of activity that was learned at the stall bars. The use of two chairs as a walking frame will establish weight bearing confidence and assist these patients in finding the balance and posture best suited to their disability.

#### Conclusion

It has been the purpose of this paper to call attention to a practical piece of household equipment that is always available as a therapy aid. Its use involves no additional expense to the handicapped. It is convenient because of its mobility. An attempt has been made to describe but a few of the great variety of exercises that can be used to advantage in the home exercise program. Such a program enables the handicapped to promote health maintenance, as enhanced by exercise. It provides a form of activity that the patient can carry on by himself. It helps him retain the independence of thought and action recently acquired in his rehabilitation.

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# SELF-AID DEVICES AND AN EVALUATION OF THE HANDS OF QUADRIPLEGICS\*

VINCENT W. ANDERSEN\*\*

World War II and the years following it brought an increase in the number of patients with quadriplegia. At least one-third of the patients with spinal cord injuries at this installation are classified as partial quadriplegics. This, of course, implies that a great deal of time and thought by all members of the staff is necessary to help in the successful readjustment of this type of patient. In a majority of the patients with partial quadriplegia, finger flexion and extension are absent; this necessitates the use of an assistive device to aid in self-care activities. From observation of many hand disabilities encountered in the corrective therapy ward program, a simplified method of selection of the proper assistive device for different hand problems has been developed.

In bringing the picture of quadriplegia into focus, it might be well to mention briefly the remaining muscular movements of the average patient, not for a class in anatomy, but for a working classification of the quadriplegic patient.

#### Musculature:

The neck muscles are adequate in all movements and require exercise only for the purpose of allaying fatigue. Shoulder abductors are good-to-normal and require a good deal of consideration because of the part they play in all self-care activities.

Elbow flexion is usually good-to-normal and is most necessary for lifting the body about in bed and for other activities such as feeding, personal hygiene and pushing the wheelchair.

Supination of forearm is fair to good and contributes to a better control of adaptive implements such as silverware, writing, and shaving devices.

Wrist extension is fair to good and permits greater skill in the use of devices required in self-care activities as well as control of the trapeze bar and pushing the wheelchair.

The following movements are absent:

- (a) Adduction of shoulder
- (b) Extension of elbow

- (c) Pronation of forearms
- (d) Wrist flexion
- (e) Flexion and extension of fingers

There is of course, some variation in the patterns of paralysis, depending upon the level of cord injury.

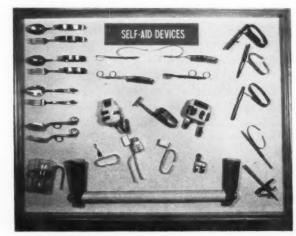


FIG. 1
Left side—Eating devices
Upper center—Toilet articles
Lower center—Smoking devices and Trapeze Bar
Right side—Writing devices

Selection of the Device Principle In Various Hand Disabilities

To explain the uses of the various devices on the display board (Fig. 1) pictures of hand disabilities most frequently encountered are shown and then the device principle most usable in each case is discussed.\*\*\* There are four basic device principles (Fig. 2) which help to standardize implementation and to reduce problems to a minimum.

The most adaptive hand (Fig. 3) is a hand with strong wrist extensors and with moderate tightness in the flexors of the fingers. The strong wrist extensors are used functionally on the trapeze, pushing wheelchair and manipulation of legs. Moderate tight-

<sup>\*</sup>Presented at the Ninth Annual Conference of the Association for Physical and Mental Rehabilitation, June, 1955, Boston, Massachusetts.

<sup>\*\*</sup>Corrective Therapy Section, Physical Medicine and Rehabilitation Service, Veterans Administration Hospital, West Roxbury, Massachusetts.

<sup>\*\*\*</sup>All the devices described have been constructed in our Orthopedic Shop and the author would like to pay special tribute to Mr. Bruno Tassinari for his untiring efforts and cooperation in devising these adaptations.

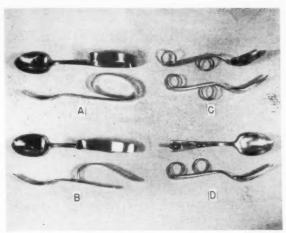


FIG. 2 The Four Basic Device Principles a. Metacarpal wrap-around

b. Clip-on

c. Rings over and under

d. Two rings over

ness of the finger flexors permits the patient to hold objects and perform other self-care activities such as dressing. "The two rings over" adaptations (Fig. 2-D) have proven to be the most satisfactory. Here, rings



FIG. 3
The Most Adaptive Hand

have been provided for the ring and index fingers. This particular hand disability allows more patients to later discard these devices and use standard equipment. On the display board (Fig. 1) further uses of the ring principle on toilet articles and cigarette holders are shown. Rings are also successful on type-writer punchers.

The "claw fingered" hand disability is shown in Fig. 4. In the first place, claw fingers are not wholly undesirable. The hooks formed by this type of con-



FIG. 4. The Claw Fingered Hand

tracture are very adaptable to self-care activities and present no problem to the sitting position in bed or in pushing the wheelchair. For this particular disability the "clip-on" principle (Fig. 2-B) has proved to be the best. It is maneuverable and easily placed on the hand by forcing the hand into the clip. On the display board it can be seen how versatile this device principle may be, as with eating equipment, drinking glass, toilet articles and cigarette lighters. It is by far the most widely used type of device.

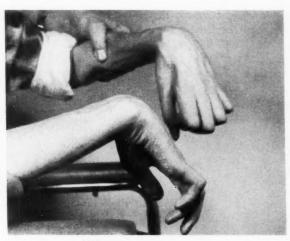


FIG. 5
The Flail Wrist Hand

The "flail wrist" is shown in Fig. 5. Flail wrists do not necessarily prohibit self-care activities. Light cock-up splints are required and may call for assistance in placing them correctly. However, this minimal assistance will then allow the patient to carry on independently in feeding, shaving, writing, typing and other self-care activities. The device found to be best for

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this disability is the "metacarpal wrap-around" (Fig. 2-A). This device readily fits between the cock-up splint and the palm of the hand. The "wrap-around" offers stability from both the index finger and the little finger side of the hand. The fitting of this device, of course must be accurate.



FIG. 6 The Straight Fingers Hand

In the "straight finger" disability (Fig. 6), the fingers may be in the way during self-care activities. The "wrap-around" and the "clip-on" devices are placed in the metacarpal areas; the "two rings over" device (Fig. 2-D) used in the case of the straight fingers is placed distal to the metacarpalphalangeal joints of the hand. This brings the device within better range of use. On the device display board (Fig. 1) is a sample of standard silverware with two ring attachments. These rings make provision for the index and ring fingers. As you can see, this principle may also be used with toilet articles.

With forearms that are most functional in a neutral position, (Fig. 7), that is, midway between a prone or supine position, another use for rings (Fig. 2-C) has been found. Again there is need of active radial extension; or the use of a cock-up splint if the wrist is flail. To maintain a spoon at a functional level, the "rings over and under" principle is used. One ring is attached on the under-surface of the handle close to the hook of the spoon to provide for insertion of the thumb. The other ring is placed on the



FIG. 7
The Neutral Position

upper surface and tail of the handle. This ring is for the insertion of the index finger.

Of a group of twenty-nine quadriplegic patients initially feeding themselves with adapted implements, fifteen have become proficient enough to discard their self-aid devices. About the same proportion of patients using adaptive devices for functional activities such as shaving, and brushing the teeth, are eventually able to discard assistive devices. The aim of our treatment program is, of course, the development of physical ability so that assistive devices are unnecessary.

The constant practicing of proper positioning of body for good balance, and of increasing the range of control and coordination through the use of devices oftentimes means the difference of success or failure in a functional goal.

Being physically independent is a desirable goal of man and any assistance to a disabled person to attain this goal should be encouraged.

#### Summary

- 1. Four basic device principles governing the selection of devices for different hand disabilities are presented.
- 2. The selection of these particular device principles is the result of much experimentation with a wide variety of quadriplegia hand disabilities.

GIVE TO THE SCHOLARSHIP FUND

### INITIAL COMMUNICATION CHART FOR APHASICS

MAURICE SKLAR, M.Sc.\*

DAPHNE NICHOLSON BENNETT, Ph.D.\*\*

Introduction

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The victims of cerebrovascular accidents who have suffered brain damage are frequently handicapped by severe language loss, with varying degrees of severity of this aphasic condition. One of the most pressing problems of a patient still on the wards, before any systemized program of therapy can be undertaken, is how to begin to communicate. The difficulty is most pressing when the patient knows what he wants to say but cannot say it, as in the various forms of expressive aphasia where understanding is relatively unimpaired.

The frustration of the patient with expressive or motor aphasia is particularly high and one of the most pressing needs is to find means of reducing frustration. This is important in terms of the patient's whole rehabilitation as well as in terms of beginning speech therapy early.

Purpose and description of the chart.

It was with two objects in mind that the initial communication chart was devised at Wadsworth General Hospital (Speech Therapy Section of Educational Therapy Services).

#### 1. Post-traumatic Help in Communication

It was clear that it would help the patient considerably if he had available means of letting his basic wants be known.

For example, at a time in his illness when his primary concern is in handling body functions and body needs, when he is relatively helpless, the patient's frustration would be greatly reduced if some means could be devised by which the patient could communicate to nurses, members of his family or anyone taking care of his needs at this time. It was the primary purpose of the chart to supply a means of communication in these early post-traumatic days of his illness.

#### 2. EARLY LANGUAGE THERAPY

When the severely involved patient comes for therapy, the therapist is confronted with the problem INITIAL COMMUNICATION CHART FOR APHASICS

NURSE (	DOCTOR	BED O
WATER	F000	PILL OF
BED	WHEELCHAIR	CIGARETTE
PENCIL	PAPER	NEWS PAPER
BATH ROBE	RADIO	WATEH (
HOT -	COLD	FAMILY THE
HELLO	MONEY	OK

of where to begin. It is a truism of aphasia therapy that therapy begins on the most concrete level possible, making use of the patient's everyday needs to build up some elementary language concepts. Thus, another use of the chart was to be one approach to early language concept retraining.

The most elementary level of communication is by means of gesture and visual representation. Based on this assumption, the chart is composed of eighteen pictures (see diagram) covering some elementary needs of the patient and expressing them concretely to meet the reduced level of abstraction common in brain damaged individuals. For example, the concept of heat is introduced by means of a picture of a blazing sun, as the concept of cold is introduced by means of a block of ice.

Objects which can be seen and touched are simply portrayed in a graphic way by means of major denotative qualities. Thus, a picture of a glass of water, a wheel chair and other objects are also given.

(Continued on Page 53)

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#### HISTORY OF THE PROFESSION OF CORRECTIVE THERAPY\*

JOHN EISELE DAVIS, Sc.D.\*\*

In approaching this subject, I must acknowledge a most natural hesitation based upon the inference that any one individual can give a true historical perspective of past and contemporary events and the future promise of a discipline in a field which is so rapidly changing as activity therapy. Indeed, it seems almost presumptuous to stand before many people present here today who have written illuminating pages in this narration of a significant development and attempt to tell them the full story. It would seem more appropriate to have them tell us and give to those who are making the history the honor of explaining and interpreting it. It should be recognized that many of you here today have devised scientific applications of exercise and activity techniques in your daily clinical experience and under the guidance and encouragement of the physician have made penetrating explorations into the areas of psycho-social and psycho-physical rehabilitation. Corrective therapists here today have extended the skills and knowledge gained in their formal training and in the clinics into Federal, State, City and Civilian hospitals and rehabilitation centers. The official publication of The Association For Physical and Mental Rehabilitation along with many articles appearing in related professional journals has extended the frontiers of this discipline until today one sees frequent references to corrective therapy in many foreign publications affording opportunity to share our experience and hope with our foreign confreres.

If one were able to gain an all encompassing view of the world of corrective therapy from its inception to its present growth, he would see along the pathway of its history many striking examples of the evolution of medicine as both an art and a science. One of the gradually developing trends has been a growing utilization of exercise and activity as an integral part of medical practice. This in turn has led to more scientific examination of the psychodynamic forces inherent in physical activity. It is in this framework of highly motivated, and I might say natural activity, in which we can discuss profitably the body, spirit and idealogy of corrective therapy. We are concerned not only with a body but a personality utilizing what Adolf Meyer termed "raw behaviour" in the devel-

opment of a professional discipline. The personality of corrective therapy has been influenced by many environment developments which have brought about a realization and need for such services as the corrective therapist may supply including cultural pressures for more humane and effective social and medical services for both civilian and veteran. Economic factors have also entered to promote the need for greater therapeutic efficiency in terms of man hour savings expended in treatment. Surrounding the physical measures of rehabilitation and responding to the increased effectiveness of its techniques has been a revitalized interest and comprehension of the practical effectiveness of the modalities and philosophy of rehabilitation to meet the needs of the sick and disabled, to restore them to social and economic usefulness and to repair damaged personalities bringing back to them the "will as well as the way" of independence. It is in such a vitalized social-medical atmosphere that corrective therapy has been privileged to live and grow into what we feel is a significant contribution to progressive therapeutic practice.

I can hear some of my skeptical friends remark, "Well this sounds very nice but what you say about corrective therapy might well apply to any or all of the activity therapies. What is there unique in the contribution and consequent historical development of the corrective therapist?" Let us attempt to answer this very practical question. In the first place, the corrective therapist accepts the physical aspect of exercise as simply the framework for corrective procedures in providing the basis for the mechanics of theprocedure. He is engrossed with the whole individual and the psychological effects of exercise and activity upon him. He believes there is a close parallel between behaviour disorders and psychomotor organization and I might add that a mounting array of current experimental studies such as the one released by Harvard University indicates considerable support for this viewpoint. These studies point out that the greater deviation from normal in psychologic adjustment and behaviour, the greater is the corresponding retardation observed in psychomotor function. The corrective therapist utilizing a wide gamut of exercises and activities for the general medical, surgical, the psychiatric, orthopedic, tuberculosis patients based upon their physical and psychological needs, is contributing to the scientific verification of these findings.

As this discipline has grown and developed there

<sup>\*</sup>Presented at the Institute on Adapted Physical Education, New York Univ., Dec. 1954.

<sup>\*\*</sup>Former Chief, Corrective Therapy, Veterans Administration, Washington, D. C.

has been an increasing realization of the need for a highly individualized approach to meet the distinctive needs of the patient for 1) emotional satisfaction, 2) motor retraining and correction of physical motor malfunctioning, 3) initial and sustained motivation, 4) socialization. Daily clinical experience has impressed the corrective therapist with the concept of therapy as both a doing and feeling process realizing that the dynamics of his approach involves a constantly changing milieu differing in many respects with each individual patient.

The corrective therapist subscribes to the Dewey interest-effort principle since, in his evolving practice, he has grown to realize that in the last analysis, the patient will do that which holds the greatest interest for him. The therapist has learned the futility of attempting to create the effort first and the interest afterwards. He attempts to discover and utilize the basic interests of the patient and utilizes his spontaneities as the most natural and effective pathway for therapeutic procedures. The newer developments of clinically oriented vocational counselling are taken advantage of by the corrective therapist for their effectiveness in creating long range motivations based on job satisfaction for the treatment of the total individual.

A survey of the evolution of exercise techniques will provide a significant glimpse into the historical development of this discipline as a unique, scientific approach. Initially, as you well know, corrective therapy was an outgrowth of the reconditioning program of the Armed Forces. The early emphasis was upon physical reconditioning with some recognition of psychological conditioning which combined activity regmens for the purpose of returning the soldier to combat. The stress was necessarily upon the needs of the armed services to maintain and restore man resources. When the Army program was incorporated into the Veterans Administration hospitals, the former reconditioning program naturally began to become readjusted to meet the needs of the patient away from war and preparing to return to civilian life. The scope of the need expanded to prepare the individual to live and make a living in a civilian economy and a noncoercive social environment. The rationale and techniques were, as one might well imagine, greatly influenced by this new therapeutic climate.

An attempt to provide an historical perspective of a professional discipline must necessarily take into account the character and calibre of the personnel who are responsible for the operation. It should be pointed out for the record that Howard Rusk assisted in the organization of The Veterans Administration program by providing the names of those who had been particularly successful in the Air Force Rehabilitation

program. These men, selected from 20,000 reconditioning personnel in the armed services and referred to by Dr. Rusk as "the cream of the crop" were employed by the Veterans Administration and constituted the initial group who laid the groundwork for the development of corrective therapy. It should be pointed out in this connection that these staff workers are exceptionally well qualified in both formal education and in clinical experiences. Today, the corrective therapist has a B.A. or B.S. degree, many have M.A. degrees and several have Ph.D. degrees in physical education and rehabilitation. The average corrective therapist member of The Association for Physical and Mental Rehabilitation has had seven years of active clinical experience under a physician.

It can be readily recognized that this discipline of corrective therapy extended to the Veterans Administration hospitals would necessarily have a different application and the motivation for the patient's cooperation in the treatment would stem from a different base. It was in this new environment that corrective therapy began to develop a much wider scope of program with a more comprehensive rationale and psychology. The special psychiatric courses set up at the Topeka Hospital under Dr. Karl Menninger stressed the psychodynamics of activity and the operation of these natural forces to produce both helpful and harmful results. Dr. Menninger reminded us that these pleasurable activities within the gamut of the corrective therapist should be used to cater to the patient's actual needs and not to his whims and fancies. The therapist must realize the importance of differentiating the broad areas of entertainment from specific therapy. However, this does not impy that entertainment per se is not therapeutic if individualized for specific therapeutic purposes.

It was also at Topeka where corrective therapists were oriented into the more precise relationships of group and individual therapy. It was here that the concept of milieu therapy became an important working base for dealing with the psychiatric patient. The therapist learned through didactic instruction clinical practice and demonstration the many ways in which the coherence of the group can assist the individual. From these lessons there has evolved, in the practice of corrective therapy, many unique combinations of activity and psychology which has enriched and made more effective the patient-therapist relationship.

Another focal point in the evolution of corrective therapy in response to social need has been the stress which the therapist has placed upon the dignity and independence of the individual. Activities were designed to aid the patient to mobilize his resources to help himself. The positive philosophy of corrective therapy stressed working with rather than on the pa-

From the foregoing, one might get the impression that the progress of corrective therapy has been entirely in its psychological orientation. While this is, in my opinion, an important factor, there are other aspects of its organic growth which should be brought out as illuminating elements in its history. It we are to point out any one of the various psychiatric systems which have been particularly helpful to the professional development of corrective therapy, I believe we should mention Meyer's Psychobiology. Meyer, for whom I had a personal affection for the reason that I had the pleasure of knowing him for many years and availing myself of his guidance, was a believer in the sensory level as the basic level of expression of the regressed mental patient. He frequently stated that activity is the language of the patient, that he could tell in his activity what he could not tell in the formal interview. Meyer believed that physical activity provides the most usable areas of communication and the play life of the patient gives most helpful information for treatment, diagnosis and prognosis. Meyer's contributions to the historical development of corrective therapy are most significant.

Meyer's original stress upon the non-verbal levels as areas for therapeutic approach and treatment have been reinforced by various psychiatrists and psychologists. Waites1 in a recent article points out the more extensive areas of the sensory approach. He discerns various types such as the visiles, those who think and emote through sight; the audiles, those who get and give through sound; tactiles, those who learn by touch and motiles, those who learn by movement. The relative importance of these sensory, as compared to the verbal levels, is further explained by Waites in discussing the child's development as follows: "First there is the pleasure that comes from sight, later comes the pleasure of locating sounds, later still the pleasure of touch and finally the pleasure of the first word." The development of corrective therapy in the psychiatric field has been primarily in the appreciation and utilization of the non-verbal areas and I believe this conceptual framework has given our discipline a unique character among the ancillary medical

In its professional growth, corrective therapy has advanced along with the onward march of rehabilitation through the initial phases of definitive medicine into the practice and concepts of total treatment. Specialized methods and techniques have been developed pertaining to prevention, diagnosis, prognosis and rehabilitation. Adaptations and modifications of all types of exercise and activity have been constantly changed and improved as a result of intensive training and daily experience in clinical situations dealing with a great number and diversity of pathological conditions. Corrective therapists have attempted to visualize these programs as extending beyond specific and immediate needs, realizing the need for constant reexamination of therapeutic practices and reformulation of conventional conceptualizations. As a profession we have attempted to avoid a narrow provincialism so as to create a practical social place and position for this discipline. It has been remarked that a profession to create the desirable image society will accept must feel as well as hear the cry of the sick and injured to be helped. The history of corrective therapy, as you know, is not confined to the progressive refinement of physical techniques but its development has been nurtured within the social warmth and encouragement of individuals and professional bodies who have felt this kinship of group responsibility.

On the other hand, the progress of this discipline has been also along the lines of a practical science. The corrective therapist from the initiation of this discipline as an outgrowth of the reconditioning programs in the armed forces had a job to do and attempted to accomplish his work in a practical manner. It has been an axiom in this profession that a non-functional activity is a non-therapeutic activity. This principle stressing the functional aspect of exercise and activity has been primary.

The present stage and status of corrective therapy, as you are well aware, stems from the organization of The Association for Physical and Mental Rehabilitation at the Veterans Administration Hospital, Topeka, Kansas. On October 29, 1946, a group of corrective therapists attending a special course of instruction organized this association with Mr. Chris Kopf as president. This association has proved to be a progressive, ethical body which has advanced the professional development of this young member of the ancillary therapies with a view to the future as well as the present and the past.

Today corrective therapy has grown into a large and progressive ancillary medical discipline with subspecialties developing an intensive physical and psychological approach to the surgical patient, the gen-

<sup>&#</sup>x27;WAITES, A., Limitations of Contemporary Psychiatric Procedures For the Non-Verbal Psychotic, Journal of The Association for Physical and Mental Rehabilitation, 8:5:143, Sept. 1954.

eral medical patient, the neurological, the orthopedic, the psychiatric and the tuberculosis. I have tried to detail some of the significant factors in this growth and expansion focusing our perspective in corrective therapy as a body, spirit and personality.

A generation ago Dr. Abraham Flexner set down certain criteria for judging whether an occupation has attained professional status or not. According to his interpretation of the professions: "First, they involve essentially intellectual operations accompanied by large individual responsibility; second, they are learned in nature and their members are constantly resorting to the laboratory and seminar for a fresh supply of facts; third, they are not merely academic and theoretical however, but are definitely practical in their aims; fourth, they possess a technique capable of communication through a highly specialized educational discipline; fifth, they are self organized with activities, duties and responsibilities which completely engage their participation and develop group consciousness and finally; they are likely to be more responsive to public interest than are unorganized and isolated individuals and they tend to become increasingly concerned with the achievement of social gains."

In a review of corrective therapy in its historical perspective, we can well ask ourselves whether this discipline in its inception, growth and direction meets the practical criteria for professional status as set down by Dr. Flexner.

This development has, and continues to stress, intellectual operations in the employment of the concept of physical exercise as basically a learning process. As a result of his training and the nature of his work, the corrective therapist is given individual responsibility and encouraged to develop individual resourcefulness and initiative in a constantly challeng-

ing and changing socio-medical field. He realizes fully the primary importance of the clinical situation as a milieu in which he can develop scientific techniques in an atmosphere of intellectual freshness and flexibility. He is dealing with a very practical situation and while he may aspire to grow as a social or behavioral scientist, he keeps his feet on the ground to be close to everyday happenings. The corrective therapist has grown to accept the functional concept of exercise and activity as fundamental to the professional development of his discipline. This simply means that these exercises and activities must subserve a very practical purpose such as assisting the individual to dress himself, feed himself, walk and work.

The techniques of corrective therapy are capable of communication through various educational disciplines. Technical directives, informational articles, professional discussions has enabled this discipline to communicate rationale, method and social orientation to professional and lay groups. Corrective therapy was organized in response to a definite and insistent medical need. It has been self-organized in the sense that those who are working actively as therapists in this field, on the basis of medical guidance in a clinical situation, have devised constantly changing methods and techniques. In these efforts, a professional group consciousness naturally emerged to unify and make more effective these therapeutic efforts.

Finally the growth and development of corrective therapy has been in response to the public interest for improved care, treatment and rehabilitation of the sick and disabled, and has been increasingly concerned with the achievement of social gains so that in a democracy, each individual may be given some of the strength and knowledge of the group to fulfill his destiny as a social being.

## Be a Booster

Contributions are now being accepted for the annual listing of friends of the Association for Physical and Mental Rehabilitation which will appear in the official convention program. Members are urged to cooperate in this drive NOW. Mail contributions to Coleman B. Paul, Program Charman, 1809 Pennsylvania Ave., Augusta, Ga.

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## SOME CLINICAL DATA ON WOMEN'S ATHLETICS

ERNST JOKL, M.D.\*

(EDITOR'S NOTE: The increasing interest shown in Europe, especially in the Scandinavian countries, Poland, Czechoslovakia, Hungary and Russia in physical education and competitive athletics for women raises a number of special physiological and clinical problems which Dr. Jokl will discuss in a number of articles of which this is the first.)

#### Periodicity and Athletic Performance

During the 1930 Track and Field World Championships for Women in Prague, Czechoslovakia, Dr. J. Kral and Dr. E. Markalous¹ conducted a medical survey which revealed that 29% of the competitors produced their best athletic performances during menstruation. A number of athletic records, e.g., in the high jump, the sprints, shot put and discus throw had thus been established. In 63% of the participants, menstruation had no effect upon performances while in 8% a slight drop of efficiency was in evidence.

At the Sports-Medical Congress during the Olympic Games in Finland in 1952 Dr. Ove Ingman<sup>a</sup> reported on the results of a similar study on a group of 107 female champions consisting of nine swimmers, thirteen gymnasts, twenty-eight basketball and baseball players, fourteen skiers and skaters and forty-three track and field athletes, age 15 to 35. With four exceptions all of them had taken part in competitive events during menstruation without experiencing disturbances of any kind; 20 reported that their performances during menstruation were better than usual and 5 had attained their record scores at this time. No effect of menstruation on athletic efficiency was noted by 45 and poorer than normal results by 39.

In a consecutive series of 543 European female track and field athletes, hockey and tennis players. swimmers and gymnasts, not a single instance of serious menstrual disabilities was encountered. By contrast, of 702 girls of 15 to 20 years of age who, during World War II, had to perform physical work under the mental strain of compulsion, 19.2% reacted with major abnormalties of the menstrual cycle, half of them with amenorrhea. Even two years after regaining their freedom, C. Kaufmann and H. A. Muller<sup>3</sup> found that 3.4% of the girls had failed to recover their cycles. The magnitude of the physical stress imposed by the work demands with which these girls were confronted was negligible compared with the enormous neuro-muscular effort displayed by the 543 women athletes. But a woman who competes in sports does so voluntarily. Freedom is not only a moral concept but it also represents a basic psycho-physical need of cultured and sensitive woman.

#### Child Birth

In a paper, "On the Course of Delivery of Finnish Baseball Players and Swimmers", Dr. Kalevi Niemineva presented an analysis of the obstetrical records of 94 women who had competed for the Finnish national championships or had won prizes in major swimming contests during the years 1933-45, subsequently married, and had children.

Major disorders during pregnancy, especially toxemias, were not more frequent among the athletes than among non-athletes. The results of measurements of the bony pelvis were of special interest since a high incidence of narrow pelves has been reported from Finland; and also because it has at times been asserted that female athletes have narrow pelves. The skeletal measurements of the former champions showed no departure from normal dimensions.

In respect to the duration of labor the athletes did better than women who had not previously participated in competitive sports; mean totals for the former being 17 hrs. 27 min. as against 21 hrs. 26 min. for the latter. In the case of the swimmers, the second stage of labor lasted 40.2 min.; for the baseball players 55.4 min.; as against 1 hr. 1 min. for the controls. In the athletes there were no disorders in uterine contractions nor any indication that the elasticity of the cervix was lessened.

In the athletic group, no case of a third degree peritoneal tear and only three cases of second degree tears were encountered. The incidence of episiotomies was very low. The data leave no doubt that the functional state of the muscles was excellent.

The incidence of Caesarian section and of use of outlet forceps was such as "not even to approach the upper limit of what is to be considered normal." The same statements applied to the number of cases in which manual removal of the placenta or blood trans-

<sup>&</sup>lt;sup>1</sup>KRAL, J. and MARKALOUS, E. in *Proceedings, II International Sports Medical Congress*, Thieme, Leipzig, 1937, p. 399.

<sup>&</sup>lt;sup>2</sup>INGMAN, O. in Sport Medicine, Helsinki, 1953, p. 96 - 99. <sup>3</sup>KAUFMANN, C. and MULLER, H. A., Geburtshilfe and Frauenheilkunde, Sept. 1948.

<sup>&#</sup>x27;NIEMINEVA, K. in Sport Medicine, Helsinki, 1953, p. 169-172.

<sup>\*</sup>Director of Rehabilitation, Univ. of Kentucky.

fusions had to be resorted to because of hemorrhage.

Eessentially, the same findings were reported by Dr. W. A. Pfeifer<sup>5</sup> who analyzed the obstetric histories of 107 outstanding former women athletes in Germany, among them several world, Olympic, European, and National champions. Some of them had attained their best performances after the birth of the first child, and Pfeifer states that pregnancy and birth activate in many young women latent forces which greatly improve their physical efficiency. As in Niemineva's study the total duration of delivery was found to be significantly shorter in the German ex-athletes, the third phase of birth actually lasting only half as long (1 hr. 41 min) as in the control group. Fertility ratios were found to be no different in the ex-athletes compared with control figures from the Heidelberg Gynecological Clinic in which this study was conduc-

The fact that all obstetrical data as obtained from athletes or former athletes is normal answers two questions that have frequently been raised, namely, whether track and field activities, such as the broad and the high jump may cause damage to the pelvic organs, and whether performances of endurance such as the half mile race overtax the resources of the cardiovascular system of women. Both questions can be answered in the negative.

#### Age, Fitness and Social Status

Currently, the age span of participation of women athletes in top level competition increases. Young girls of 15, 14, and even of 13 have attained Olympic honors. Until 25 years ago, it was unusual to encounter married women among champion performers. As a result of the acceleration of growth and the deceleration of aging which characterize the growth pattern of our time more than half of the Olympic finalists in the Women's events of 1952 were married and had children. Many of them were over 35 and at least two were grandmothers.

It was only about fifty years ago that women began to claim their right to participate in sports and games and athletics. For a long time their efforts encountered considerable resistance. They were told that sport would produce "a masculine type of woman"; that "exercise makes girls muscle-bound"; that participation in competitive athletics" would lead to difficulties in childbirth;" even rare developmental malformations were alleged to be caused through athletic training.

In the meantime, millions of girls have indulged in sports, gymnastics and games; competed in swimming, on track and field and on horseback; women have climbed some of the highest mountains and swam through a thousand rivers and lakes. They have derived therefrom some of the most valuable experiences of their lives. All the evil ghosts of whom they had been warned have remained conspicuous by their absence. That the present generation of women grows stronger; that their maturation is better balanced as shown by the fact that in physically trained girls menarche takes place later6; that the state of health of young mothers and of their children today is superior; that 30-year old women no longer look old; that school girls can play and exercise on the same teams as their mothers; all this is, at least in part, the result of the intense interest they are taking in physical activities. Sports and games and athletics for women are significant elements of what is best in contemporary culture.

The analysis of over 5,000 case entries and individual performance data collected at the 1952 Olyanpic Games by Karvonen and Jokl (in print) has yielded impressive evidence that the participation figures for women in the Olympic events are indicative of their health, social and economic status. Half of the countries represented at Helsinki failed to include women on their teams-eloquent proof of the social backwardness which prevails in large parts of the world. Conversely, those countries who in proportion to their populations, sent the greatest number of women to the Olympic Games (especially the European and North American countries) represent the most highly industrialized societies characterized not only by favorable standards of physical efficiency but also of morbidity, of child mortality and of longevity. They have shaken off the civic disabilities which millenia of prejudice and ignorance had imposed upon women.

#### PATRONIZE OUR ADVERTISERS

<sup>&</sup>lt;sup>6</sup>PEIFER, W., Sportlicher Wettkampf und Geburtsverlauf, Sport und Leibeserziehung, p. 9-19, 1951.

<sup>&</sup>lt;sup>6</sup>KLAUS, E. J., Konstitution und Sport, Tries, Freiberg. 1954, p. 34-45

### PHYSICAL DISABILITIES IN SPORTSMEN\*

H. J. C. J. L'ETANG, B.M., D.I.H.\*\*

Medical Practice, particularly in recent years when few doctors escape duties concerned with pension or industrial compensation boards, is apt to induce in the observer an unduly gloomy view of the extent of disability resulting from physical injury. It is clear that the patients seen in this context are only a proportion of those who sustain similar injuries, and the critical mind will automatically suspect a bias in the sample.

Partly in order to correct this clinical impression, and partly in order to have at hand the means of encouraging patients unduly depressed by some physical disability, some years ago I started to collect extracts from newspapers and sporting literature dealing with the disabilities of first class sportsmen. They make such intriguing reading that I felt it might be of interest to review the more remarkable in a short article.

#### The Special Sense Organs

Of the special senses, keen vision is essential for many ball games. Bad eyesight need not prevent one from playing cricket if the defect can be corrected, and among the "illustrious bespectacled" are such Test batsmen as Arthur Richardson of Australia, P. G. H. Fender of England, and the three New Zealanders, Maloney, Kerr, and Hadlee. Also in this category are P. A. Gibb and R. A. Young, who besides being useful batsmen, represented England as wicket-keepers. From America comes news of a successful negro baseball player, George Crowe, who wears spectacles.

Monocular vision would handicap a batsman in judging distance and in depth perception, but there have been at least three one-eyed cricketers. Admittedly, Nupen of South Africa was primarily a bowler,3 but it is not commonly realized that Prince K. S. Ranjitsinhji falls into this category4. He lost the sight of one eye in a shooting accident in 1915, and decided to play cricket again after the 1914-18 War, and actually hoped to write a book to one-eyed batting. For the purpose of this article it would be pleasant to record his success, but alas, his performances were modest in the extreme, although age, increasing weight, and long absence from the game were important adverse factors. W. H. Fryer (1829-1919), who played for Kent between 1852 and 1872, lost the sight of his right eye in 18625. He continued to bat successfully, though he rarely kept wicket after the accident.

Keen vision is not really necessary in football, although two English professional soccer players, Jack Livesey (Doncaster Rovers) and Hair (Newcastle and Grimsby), wear contact lenses. In the Scotland v. France Rugby match of 1920, one Scottish forward and two French forwards were one-eyed, and Wemyss of Scotland and Lubin of France marked each other in the line outs?!

Nor is keen vision necessary in boxers, and there have been occasions when boxers could hardly see their opponents. Sam Langford<sup>®</sup>, known as the "Bos ton Tar Baby", lost the sight of his left eye in 1917 when the vision of the right eye was minimal. He fought until 1924, when, after knocking an opponent down, he lost him, and wandered aimlessly round the ring. Harry Greb<sup>o</sup>, the "Pittsburg Windmill", fought in a similar condition, and once when a fight was being arranged, asked his manager to bring the prospective opponent into the light so that he could see him! The suggestion that Harry Greb (or any other boxer) could have fought with a glass eye has been ridiculed, but recently while Luther (Slugger) White, the coloured lightweight, was being medically examined before a fight ir San Francisco, one of his eyes popped out of its socket on to the floor, to the consternation of the medical attendant16!

These feats are not so remarkable when one realizes that with increased training facilities, totally blind athletes can participate in games. Robert Allman<sup>11</sup> captained the University of Pennsylvania wrestling team in 1939, and in 1942 Jack Twersky<sup>11</sup> won the New York City Metropolitan wrestling championship in the 121 pound class. Charles Boswell<sup>11</sup>, a blind golfer, played 18 holes in 82 strokes at Highland Park, Birmingham, Alabama. His caddy indicated the lie and the distance, and on the tee guided the head of the club against the ball. In 1931, Don Morgan,

<sup>\*</sup>Reprinted from The Practitioner, 1053:174:584-588, May,

<sup>\*\*</sup>Medical Officer, North Thames (England) Gas Board.

<sup>&</sup>lt;sup>1</sup>The Cricketer, July 11 to August 8, 1953.

<sup>&</sup>lt;sup>2</sup>New York Sunday News, February 10, 1952.

LANGFORD, A. W. T., Personal Communication.

<sup>&#</sup>x27;WISDEN'S Cricket Almanac, 1934

\_\_\_\_\_\_, 1920.

BOWES, W. E., Express Deliveries

WYNNE-JONES, G. V. Sports Commentary

<sup>\*</sup>KILDARE, J. Everybody's Weekly, April 2, 1951.

<sup>&</sup>quot;FAIR, J. R., Give Him to the Angels.

<sup>&</sup>lt;sup>10</sup>New York Times, Book Reviews, 1946.

<sup>11</sup>BUELL, C., Recreation, January, 1948.

blind as a result of a fireworks explosion, stroked one of the Cornell crews<sup>11</sup>, and in 1952 John Sharp performed a similar feat in one of the Reading University crews.

The increased social consciousness which has enabled the blind to live a fuller life, has performed a similar function for deaf mutes. Despite sensational stories in the newspapers, there is really nothing remarkable in the performances of the Negro boxer, Gene Hairston<sup>13</sup>, who is a deaf-mute. Indeed, those who were forced to listen to the volley of chatter and abuse that flowed from the lips of boxers such as Jack Johnson and Max Baer, must at times have wished that they were similarly afflicted! An inability to appeal to the umpire would undoubtedly be a disadvantage at cricket, and it is said that E. H. Sweetland<sup>4</sup>, who sometimes kept wicket for the M.C.C., completely lost his voice in these circumstances.

#### Skeletal System

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Among cricketers, bowlers normally possess a high degree of manual dexterity, although Roche<sup>14</sup>, an Australian who played for Middlesex at the turn of the century, is an exception-two fingers missing in his bowling hand, and the thumb was stiff. Another Australian, 'Dainty' Ironmonger15 10 17, had lost the first joint of his index finger, which prevented spinning the ball in an orthodox manner. The only disadvantage was that his bowling action was often said to be unfair. Even illness may have its compensations. Fleetwood-Smith10 was originally a right arm fast bowler, but following an illness he noticed weakness in this arm. Consequently he began to bowl with his left arm and, if not the first person to bowl the left arm 'googly' or 'chinaman,' he was the first to use it as a stock ball in a Test Match. It should be noted that all the three bowlers named are Australians.

The present American open golf champion, Ed. Furgol, broke his left arm in childhood. The fracture did not heal properly, and the left arm is crooked and wasted. To balance his swing Furgol has to keep his right arm bent, but despite this he outhit many of the other golfers in the field<sup>38</sup>. The annual onearmed golfers competition is a reminder of what these amputees can accomplish. Many remember Redl, the one-armed Austrian tennis player who played at Wimbledon just after the 1939-45 War: his skill was as remarkable as that of the one-armed American baseball player, Pete Gray<sup>30</sup>, who hit a home run over a 20-foot fence, 330 feet from the home plate.

A list of sportsmen with disorders of the lower extremity makes impressive reading. Harry Lee<sup>21</sup>, the Middlesex cricketer, was wounded at Neuvre Chapelle in 1915, with the result that there was muscular wasting and shortening of the leg. Peter Howard<sup>22</sup>, the

English Rugby forward, states that he has been lame since birth, his left leg being no thicker than his wrist, with inability to point the toe. Harry Legge<sup>23</sup>, a successful professional boxer, has a withered leg. T. Gray<sup>24</sup>, fly-half and full back for Northampton and Scotland, was wounded in the leg in the 1939-45 War, and has one football boot built up to compensate for shortening. Glenn Cunningham<sup>25</sup>, the American mile champion, suffered severe burns of the legs in childhood; and finally, the tennis player, Doris Hart<sup>23</sup>, suffered leg trouble in childhood, variously attributed to poliomyelitis and injury. This has effected her speed around the court, which may account for her failure to attain the highest honour.

Poliomyelitis is becoming increasingly common, and causes great distress to parents who are naturally concerned over the future of the affected children. They may find comfort in the case of Walter Davis of Texas<sup>26</sup>, who suffered this disease at the age of eight years. At the age of 21 years he became the high jump champion, clearing 6 feet 11½ inches. Tenley Albright<sup>26</sup> had poliomyelitis at the age of 11, and afterwards was encouraged to strengthen her muscles by skating. At the age of 17 years, she became the first American girl to win the world figure skating championship.

One-legged people almost outrival the one-armed in their adaptions. Johannes de Villiers<sup>20</sup> lost his right leg in childhood, but high-jumped 5 feet 7 inches in his first competition. Alan Burrough<sup>18</sup>, the rowing blue, had his right leg blown off below the knee in the North African campaign, but was elected Captain of Thames Rowing Club in 1946 and rowed in the Stewards IV and the Grand VIII. It is interesting that sportsmen in this category attempt mountain climbing, one of the most hazardous of sports. Geoffrey Winthrop Young<sup>20</sup> lost a leg in the 1914-18 War, but climbed the Matterhorn in 1928 and in his 60th year climbed the Zinal Rothorn. Not to be outdone, Decio Molognoni<sup>27</sup>, who lost a leg in the 1939-45 War, also climbed the Matterhorn in 1952. Douglas Bader,

<sup>&</sup>lt;sup>12</sup>Evening News, Sports Reports, February, 1952

<sup>&</sup>lt;sup>13</sup>Daily Express, November 3, 1952

<sup>14</sup>FRY, C. B., The Book of Cricket.

<sup>15</sup>BRADMAN, D. G., Farewell to Cricket

<sup>&</sup>lt;sup>16</sup>MOYES, A. G., Australian Bowlers from Spofforth to Lindwall, 1953.

<sup>17</sup> HAMMOND, W. R., Cricketers School.

<sup>18</sup>ROSS, G., The Boat Race.

<sup>19</sup> HAMMOND, W. R., Cricket's Secret History

<sup>20</sup> Time, June 12, 1944

<sup>21</sup>LEE, H. W., Forty Years of English Cricket.

<sup>&</sup>lt;sup>22</sup>HOWARD, P. D., Ideas Have Legs.

<sup>22</sup> WILSON, P., Personal Communication.

<sup>21</sup>CLEAVER, H., Evening Standard.

<sup>25</sup> Time, February 23, July 6, 1953.

The Times, August 2, 1928.

who represented the R.A.F. on the rugger field on many occasions, lost both legs in air crashes. Subsequently, during the 1939-45 War, he became we'll known as the legless flying ace and also achieved a golf handicap of four.

#### Vertebral Injuries and Disc Lesions

These are now more commonly diagnosed, and do not carry the gloomy prognosis they once did. Whether one should allow Rugby footballers who have suffered injuries in the cervical region, to play again in the front row of the scrum is debatable, although J. H. Steeds<sup>28</sup> and J. L. Baume<sup>29</sup> of England did so, without apparent ill-effect. A. C. Keevy<sup>50</sup> of East Transvaal broke a small bone in his neck in 1948, and was treated in a plaster collar. The only consequence was that he played in the 1949 South African Trials with a beard, as he had been unable to shave. McKee of Ireland30 suffered a ruptured intervertebral disc in 1949 and retired from Rugby football. While on holiday in the autumn of 1951 he played in a village game, and as he suffered no illeffects, he carried on, representing Ireland against South Africa a few months later. J. V. Smith<sup>24</sup> fractured a vertebra after a parachute jump in the 1939-45 War, and subsequently played Rugby for England. Multiple Injuries

If an individual were involved in an accident and suffered a crushed pelvis, a fracture of the left leg, crushed shoulder and a broken ankle, with a pulmonary embolus as an early complication, the prognosis would be guarded. The American golfer, Ben Hogan<sup>51 52</sup>, suffered these injuries on February 2, 1949, but he entered for the Los Angeles Open Championship in January, 1950, and with rounds of 73, 69, 69, 69 tied with Snead, only to lose the play off. In the summer of the same year, however, he won the American Open Championship.

#### Systemic Disorders

It would be surprising if these were common among top class sportsmen, but one is struck by the fact that three contemporary tennis players of Wimbledon class suffer from diabetes. William Talbert<sup>an</sup> and Hamilton Richardson<sup>at</sup> both come from America, and the latter has observed that if he plays in the morning he is more likely to get hypoglycaemic attacks. The third player is Lennart Bergelin<sup>at</sup> of Sweden, whose diabetes can be controlled by diet alone.

Asymptomatic valvular lesions of the heart are probably not uncommon. In 1948, Jokl<sup>35</sup> quoted the case of the South African champion Marathon runner who had mitral and aortic disease due to rheumatic fever (and a previous history of rickets, scarlet fever, malaria, bilharzia, and inguinal hernia). Abrahams<sup>36</sup> mentions a magnificent sprinter with a much

enlarged left ventricle, the consequence of aortic regurgitation, and "the best middle distance runner of his generation" who had mitral disease.

It would be unusual to find neurological disorders among first-class sportsmen, and it is possible to measure the spread of the motor neurone disease which affected the American baseball player, Lou Gehrig, by the gradual fall in his batting average. Jokl<sup>ar</sup> mentions a girl of 19 with myasthenia gravis which responded so well to prostigmine that she represented her country at hockey.

#### Conclusions

Such are the disabilities that have failed to defeat international sportsmen. Their achievement, of course, is the outcome of a personal outlook on their handicap which we would do well to encourage amongst our patients. Both they, and the community, would gain.

I am grateful to Hylton Cleaver, A.W.T. Longford, Howard Marshall, Ray Robinson, E. W. Wilson and Peter Wilson for help in the preparation of this article.

asTime, June 28, 1954.



<sup>&</sup>lt;sup>27</sup>Sunday Express, August 31, 1952.

<sup>28</sup>McKELVIE, R., Personal Communication.

<sup>&</sup>lt;sup>20</sup>Evening Standard, March, 1951.

<sup>30</sup> STENT, R. K., The 4th Springbrooks.

<sup>31</sup>BRENNAN, F. F., Readers' Digest, April, 1951

<sup>32</sup>Time, March 24, 1952.

<sup>&</sup>lt;sup>33</sup>Diabetic Journal, September, 1950

<sup>&</sup>lt;sup>35</sup>JOKL, E. and SUSMAN, M.M. (1940), J. Am. Med. Asso., 114, 467.

<sup>&</sup>lt;sup>36</sup>ABRAHAMS, A., (1951) Lumleian Lectures, Lancet, June 2, 1951.

<sup>37</sup>Lancet (1948): ii, 189.

#### CHART-Cont'd from Page 43

The head of the nurse and the doctor have priority placement on the chart. Pictures bearing on the patient's recreation needs are also included: radio, newspaper, and other items.

Bearing in mind the need of approaching language from as many sensory stimuli as possible, the name of each object or concept is printed opposite the pictures. Finally, three words in common use are given in bold letters without pictures (HELLO, MONEY, O.K.) Elementary abstract concepts of language in use of the patient's immediate concern are thus represented.

#### Uses for the chart.

It was implied that the patient with expressive type of loss would particularly benefit from any means of improving his capacity to make himsell understood. It is, in fact, with expressive aphasics that the chart has proved most helpful in the two years of its use in the Wadsworth General Hospital.

It has been used on the wards with some good effect in reducing frustration and increasing initial communication attempts of the patient. When it is necessary for the therapist to make his rounds on the wards to evaluate post-traumatic aphasics, the chart is left with the individual patient as his communication chart. In the initial stages of speech therapy, if the patient has not already received his chart and is sufficiently involved to need one he can be given one. On each individual chart the patient's name, ward and bed number is added. This supplies individual identification for the patient.

The chart has limited uses for the patient with receptive loss for whom the multisensory approach must be used, but it can be one approach for this kind of patient also.

Other uses of the chart can be adapted and devised by the individual therapist. For instance, it can be used with supplementary material in the therapy room for early copy in naming and writing for cases of anomia.

# Conference Report

#### TRI-STATE PHYSICAL FITNESS CONFERENCE

More than 400 physical education, health, and recreation leaders from New York State, New Jersey, and Connecticut participated in the Tri-State Physical Fitness Conference on February 17 at New York University's School of Education.

The conference, sponsored by the School's department of physical education, health, and recreation, featured talks by physicians and educators on physical fitness in adult life and youth.

Specific topics included the relationship of physical fitness to longer life, weight control, chronic degenerative diseases, and mental health; the effects of sedentary living on physical fitness; the effects of exercise on the heart; and the physical fitness of American youth as compared with that of young people of other nations.

Dr. Leonard A. Larson, chairman of the department of physical education, health, and recreation, presided at the opening general session; Dean Ernest O. Melby of the School of Education welcomed the participants; and Dr. Raymond A. Weiss of NYU, chairman of the conference, gave the keynote address.

Other speakers for the morning session and their topics were.

-Creighton J. Hale, research director, Little League Bastball, Williamsport, Pa., "Recent Physical Fitness Conferences."

-F. S. Mathewson, superintendent of recreation for the Union County Park Commission, Union County, N. J., "The Place of Physical Fitness in Recreation Programs."

-Dr. Roscoe C. Brown, Jr., of NYU, "Recent Physical Fitness Research."

—Bernard E. Hughes, program director, State Committee on Tuberculosis and Public Health of the State Charities Aid Association, New York City, "The Place of Physical Fitness in Health Education Programs."

-Dr. Peter V. Karpovich, professor of physiology, Springfield (Massachusetts) College, "The Place of Physical Fitness in Physical Education Programs."

The conferees participated in small group discussions from 1:15 to 3 p.m.

During the second general session, Dr. Joseph B. Wolffe, director of Valley Forge Heart Institute, Fairview Village, Pa., spoke on "Medical Aspects of Physical Fitness." Following his talk, Dr. Charles A. Bucher of NYU reported on the group discussions.

Formal endorsement of the conference was received from Vice President Richard Nixon; Finis E. Engleman, commissioner of education for the State of Connecticut; James E. Allen, Jr., Commissioner of education for the University of the State of New York; and F. M. Raubinger, commissioner of education for the State of New Jersey.

Mr. Nixon's endorsement read in part: "Your meeting is certainly in keeping with the President's concern about the fitness of our youth and it is also in harmony with his thoughts that much of this problem can be best handled at the local and area levels."

Summary of the talks as compiled by New York University's Office of Information Services follows:

#### RECENT PHYSICAL FITNESS CONFERENCES Creighton J. Hale, Ph.D. Research Director, Little League Baseball Williamsport, Pa.

Efforts to alleviate the physical fitness deficiency of America's youth became almost dormant immediately following World War II. Two significant conferences were held in 1951. One was the National Conference for the Mobilization of Health Education, Physical Education and Recreation, and the other was a physical fitness conference called by the commissioner of education for New York State.

The findings of Dr. Hans Kraus that the American children are greatly inferior to the European children in physical fitness attracted national attention. The President of the United States showed great concern and urged positive action to improve the situation for the well-being of our children and for the safety of our nation. A two-day conference was scheduled by President Eisenhower but was postponed because of his illness.

Several states responded to the President's plea. Oregon embarked on a statewide physical fitness program; a California committee on physical fitness was appointed and a two-day conference was held at Sacramento; and a physical fitness conference was held at Springfield College, Springfield, Mass.

In contrasting the various conferences it is apparent that there has been a diversity in the interpretation of physical fitness. At some conferences the emphasis was on "strength" while others accentuated "general fitness."

At all conferences on physical fitness it was generally agreed that the people in the United States are

suffering from an exercise deficiency. There is an urgent necessity to increase the time allotted for physical activity and to improve and supplement the facilities in the physical education and recreation programs.

#### RECENT PHYSICAL FITNESS RESEARCH Roscoe C. Brown, Jr., Ph.D. Assistant Professor of Education New York University

The research evidence on the minima and maxima of fitness is quite sparse. It has been established in studies involving hospital patients that bed rest results in a decline in fitness which is deleterious to the individual. As a result of this research, exercise activity to restore muscular tonicity is considered an important part of the recuperative process.

To the other extreme, there have been many studies conducted on the maxima of physical performance, strength, and endurance. There is little quantitative evidence that says an individual must have so much strength and so much endurance.

Although test norms have been established, these norms are valid only for the population on which the norms were developed. Few if any studies have been conducted on the quantitative level of fitness needed for different individuals according to age, sex, occupation, and the like. Some experts have set empirical standards as to what constitutes minima, but in the main, these standards have not been validated. Most experts identify the minimum level of physical fitness as that level of fitness which permits an individual to perform the daily occupational, home, and recreation duties without undue muscular soreness, strain, fatigue, or exhaustion. Most experts agree that there should be enough fitness reserve to meet emergencies involving some severe muscular exertion. In considerations such as this, differences between individuals are important.

We have considered the recent research on physical fitness under three categories. One, "What is the value of physical fitness?" Two, "How is fitness developed?" And three, "How is fitness evaluated?"

With regard to the first, we have explored some of the recent evidence, which, though not conclusive, is indicative of a possible relationship between physical fitness and the control of degenerative disease. We have seen that definite evidence is lacking on the question of levels of fitness needed for youth. There is a great deal of agreement, though, on the principle that the individual, child or adult, should have enough fitness to meet the task of daily living without undue physical strain.

On the question of the development of fitness, the evidence points to a regular, planned program of physical activity involving the use of the total body. The available research indicates that many types of activities result in an increase of fitness, although some activities bring about more increase than others.

And on the third question, the evaluation of fitness, we have seen the elements of fitness identified, but at the same time we have seen that the measurement devices vary with elements of fitness included in the measurement instrument.

# THE PLACE OF PHYSICAL FITNESS IN A PHYSICAL EDUCATION PROGRAM

Peter V. Karpovich, M.D. Professor of Physiology Springfield College

The basic aim of education in general is to raise the level of fitness for life. This fitness is customarily referred to as total fitness and may be subdivided into mental, physical, and social fitness. Every educator is concerned with these three subdivisions, but naturally, the classroom teacher is mainly concerned with mental fitness, while the development of physical fitness is the main task of a physical educator.

During wartime everybody seems to agree with this thesis, but when peace comes, physical fitness is relegated to a secondary position.

It is pathetic to think that physical fitness is important only during a time of mass killing. The importance of fitness for a more abundant life should be recognized in peace time.

In a totalitarian country such as Soviet Russia, the pursuit of physical fitness is considered a patriotic duty to prepare the youth for "work and defense." In a democratic country such as the USA, "work and defense" will not suffice during peace time. We must add to this "pursuit of happiness."

At the present time there is widespread apprehension that the physical fitness of American boys is inferior to that of European boys. Dr. Hans Kraus has reported that while less than 10 per cent of European children failed his test, the per cent of American children who failed was 80. Although the conclusions are being seriously questioned, his report has had the salutary effect of wakening interest in the physical fitness of American youth.

In this country, the amount of time spent on physical education by an average boy is utterly inadequate. Some schools do not have any physical education at all.

More and more physical fitness depends or schools. This dependence should not be forgotten. Provisions should be made for daily classes in physical education.

#### THE PLACE OF PHYSICAL FITNESS IN RECREA-TION PROGRAMS

F. S. Mathewson General Superintendent Union County (N.J.) Park Commission

With the hazards of street play and the loss of vacant areas due to increased building in all communities, both large and small, the providing of adequate playgrounds, parks, gymnasiums, camps, and swimming pools becomes more important each day.

It is tragic that there should be newly settled cities in this country without a single field large enough to accommodate an official baseball game.

There is an insufficient supply of trained leadership, which is partially the result of the low status and pay of recreation leaders. Again, there are insufficient funds available to properly staff recreation departments on the municipal, county, and state levels. There is also great need for research in sports and recreation.

The establishment of a federal office of recreation would assist the states to set up state departments of recreation, which in turn would help local communities establish and expand their recreation services.

More emphasis should be given to the teaching of physical skills in the grade schools. Boys and girls who master a sport will maintain an interest in it for a much longer period than those who are just "exposed" to it.

Continuing interest in physical activity can be maintained and motivated through competition, which requires trained leadership and the promotion of leagues and tournaments.

There is tremendous competition today for the tax dollar. New schools, highways, sewers, bridges, hospitals, and many other worthy and necessary projects all are demanding large sums of money. However, all park and recreation boards and their staffs, together with every citizen interested in the welfare of our people, must campaign for the needed facilities and leadership that will assure the heritage to which our future generations are entitled.

MENNINGERS AMONG LASKER AWARD RECIPIENTS
Drs. William C. and Karl Menninger were recently named
among 15 men and women for the annual Abert Lasker
award selected by the American Public Health Association.
The famed psychiatrists, whose Menninger Clinic is world
renowned, were cited for their "sustained and highly pro-

ductive attack against mental disease for many years."

The awards are presented by the Albert and May Lasker foundation to individuals and groups for outstanding contributions in research related to diseases which are major causes of death and disability, and in the field of public health administration.

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# "From Other Journals"

G. W. PICKERING, "Disorders of Contemporary Society and Their Impact on Medicine," The Lancet, 6901: 1149-1152, December 3, 1955.

Many of the worst ills of organization and outlook in medicine are due to the growth of strongly centralized associations which impose strict rules on their members. The exceptional individual is lost in the development of a standardized product. There is a tendency to forget individual men and think only of groups. The growth of scientific and technical knowledge has resulted in overcrowded curricula. Education has given way to instruction; cultural interests and wisdom are neglected. There is a fascination with machines. Often these or their techniques are so complicated that the doctor cannot understand them and takes them on trust. Existing knowledge is so vast that it has become fragmented. The general practitioner has been replaced by a panel of specialists. Communication between various disciplines has become restricted due to the growth of unnecessary technological jargon. Great scientists have made their great contributions because the ideas which they manipulated in their minds were relatively simple. The greatest enemy to straight thinking in medicine is technological jargon.

PJI

DAVID M. BOSWORTH, "The Role of the Orbicular Ligament in Tennis Elbow," Journal of Bone and Joint Surgery, 37-A:527-533, June 1955.

"Tennis elbow" has been used to embrace a variable number of leisons. It is usually amenable to conservative treatment, such as heat, massage, occasional splinting for two or three weeks, change in occupation so that strenuous motion of dorsiflexion of hand or fingers is avoided, and occasionally injections with novocain or compound F, but some lesions cannot be relieved until surgery is resorted to. Rotation of the distorted head of the radius in a changing plane, on a changing stress axis, inside a sensitive membrane, compressed by powerful muscles and tendinous structures, would be capable of producing the pain of tennis elbow. Four distinct operative procedures have been used with a total of 27 patients. The results suggest that resection of the orbicular ligament may be found efficient to alleviate the symptoms of tennis elbow.

PJR

WALTER RAPAPORT, "The Practicing Physician and Mental Health," California Medicine, 83:410-411, December, 1955.

Mental illnesses are the number one health problem of the U. S. Over half of all hospital beds are occupied by N.P. casualties. About nine million people in the U. S. have some form of mental illness—one in every 17 of our population. One out of every 10 persons will need psychiatric care and one out of every 18 will spend some part of his life in a mental hospital. Costs for care, treatment, loss of earnings and loss of federal income tax revenues exceed two and a half billion dollars annually. One of the most vital deficiencies in the treatment program is the lack of personnel. There are over 7,500 psychiatrics in the U. S.; it is estimated that a minimum of 20,000 is needed.

PJR

"Popping Joints," Journal of the American Medical Association, 160:424, February 4, 1956.

There are two theories on what happens when a joint "pops". One holds that with excess motion, there is temporarily a marked increase in negative intra-articular pressure and when the joint returns to normal a "pop" is heard. Probably a better explanation is that the tendon is overstretched and in its recoil makes the noise.

A. GRAHAM APLEY, "Test for the Power of Flexor Digitorum Sublimis," *British Medical Journal*, 4957:25-26, January 7, 1956.

To estimate the power of the flexor digitorum sublimis the patient's hand is placed palm upward on a table. The finger to be tested is left free, while the examiner's own hand anchors the patient's remaining fingers to the table, keeping them fixed and straight. The patient is asked to flex the free finger. If the sublimis is strong he will use it to bend the proximal interphalangeal joint, leaving the distal joint straight, and the distal joint can be freely wagged by the examiner. If the sublimis is weak, the patient will use the flexor profundus to assist in flexing the finger and the terminal joint will be bent and rigid.

DID

DAVID H. CLARKE and EDWARD L. HERMAN, "Objective Determination of Resistance Load for Ten Repetitions Maximum for Quadriceps Development," Research Quarterly, 26:385-390, December, 1955.

The determination of the maximum capacity of any muscle group and of the resistance load for the final ten repetitions has been a constant problem to therapists using the Delorme technique of progressive resistance exercise. To establish a practical basis for the determination of the maximum resistance load for ten repetitions for the quadriceps, cable-tension strength tests of the knee extensor muscles were administered to a group of male Army personnel. The amount of resistive weight was determined as a percentage of the strength thus recorded. A resistance load equal to 50% of the strength of the muscles tested was found to be a reasonably satisfactory figure.

PJF

L. G. C. PUGH and O. G. EDHOIM, "The Physiology of Channel Swimmers," *The Lancet*, 6893:761-768, October 8, 1955.

This paper presents the result of three years study of some of the factors concerned in the ability to endure immersion in cold water. It was found that channel swimmers tolerate hypothermia better than others, but the rectal temperature falls only when the swimmer is becoming fatigued and his expenditure of energy decreases. The energy expenditure per unit of time is not exceptionally high, but the total energy expenditure in swimming the channel is 9,000-15,000 calories. All channel swimmers studied were fat. The increased insulation and decreased rate of heat loss appear to be the chief factors enabling channel swimmers to maintain body temperature in cold water for a long time.

PJR

A. WILLIAMS, "Skiing Injuries in Novices," The Lancet, 9907:96-98, January 14, 1956.

In skiing injuries the majority of the injuries are strains of the knee or ankle or both. The common knee injury is a tear of the short capsular fibers of the internal lateral ligaments. Abduction is a constant factor in the mechanism of the injury. Treatment consists of aspiration of fluid where necessary, and application of a bandage, with the knee kept on pillows in full extension. Early quadriceps exercises are started, with particular emphasis on vastusmedialis control. Application of plaster cylinders causes quadriceps wasting and unstable knees. Patients with minor strains often ski again two weeks after injury.

PJR

M. V. ECCLES, "Hand Volumetrics," British Journal of Physical Medicine, 19:5-8, January, 1956.

The volume of the hands was studied by immersing them in tanks of water. The right hand of right handed people was generally from 10-20 ml. greater in volume than the left, and vice versa. The volume varied as much as 15 ml. during the day or from day to day. The most important causes of this variation were atmospheric temperature and activity. A normal hand increased 6-7% in volume when immersed in a wax bath at 120° F. for 30 minutes; a swollen hand increased 5-10%. Anodal galvanism for 20 minutes and short wave diathermy caused no measurable alteration in volume. The greatest decrease in swelling was obtained overnight with the hand supported in elevation.

PJR

# **Editorials**

#### WHAT IS REHABILITATION?

Arnold Toynbee has said that the twentieth century will be chiefly remembered not as an age of political conflicts or technical inventions, but as an age in which human society dared to think of the welfare of the whole human race as a practical objective.

There are few fields of present-day activity that better corroborate this statement than rehabilitation of the handicapped. For we are here dealing with a population group that, after centuries of humiliation, indifference and segregation, is given an opportunity to take its place in useful life with the rights and responsibilities that this entails. The concern of modern society for the sick and injured epitomizes the hopes and aspirations of the twentieth century for social justice and equal opportunities for all. Rehabilitation is, as Dr. Henry Kessler has stated, "at once a faith in the fundamental value and integrity of human life and a conviction that by positive action we can improve circumstances which threaten the opportunities of those who are disabled."

What, then, does rehabilitation mean in practical terms? It means, first of all, preventing permanent impairment whenever possible. This is the fundamental task which makes rehabilitation an indispensible part of medical care and education. Secondly, it means helping the handicapped to overcome to the greatest possible extent the physical, emotional, economic and social obstacles with which they are faced in everyday life by reason of their disability. It means putting at the disposal of the handicapped all the resources of modern medical, vocational, educational and social services to make it possible for them to adjust to the handicap, to develop their abilities fully and to find a place in society where they can live and work on equal terms with others.

But employment and economic independence are not the only objectives of rehabilitation. The goal is maximum adjustment and usefulness of each individaul within the limitations of the impairment. With respect to the majority of the handicapped, this means gainful employment, but it may often mean only a certain degree of functional ability. Self-care as a rehabilitation objective for many chronically ill and severely disabled persons is as worthwhile as employment for the less severely handicapped. The end result is the same in either case—maximum adjustment and usefulness.

The past few decades have seen tremendous advances in the whole sphere of health and welfare. In

the field of rehabilitation, these advances have resulted in new concepts, methods and techniques that have fundamentally changed the position and the outlook of the handicapped.

Rehabilitation is primarily concerned with human values, with restoration of the handicapped to a life that has purpose and that gives satisfaction to the individual. But rehabilitation has also important economic aspects. The handicapped have the same responsibilities as other people to participate in the development of the community of which they are a part. To give them a chance to contribute their share is to prevent economic dependency and waste of productive capacities. It means adding to the economic resources at our disposal and at the same time reducing the drain on these resources which results from the necessity of providing for the economically unproductive part of the population. This is an important factor not only in countries with a high standard of living, where an aging population causes increasingly difficult economic problems resulting from a steadily decreasing proportion of working population in relation to those they have to support. It is equally important in less developed countries, where living standards seldom exceed the subsistence level and where every member of the family, therefore, must assume his share if the necessities of life are to be secured.

#### Kurt Jansson

Chief, United Nations Rehabilitation Unit Chairman, WVF Board of Rehabilitation Consultans

Reprinted from The World Veteran, Jan. 1956, P. 3.

#### LET'S MAKE OUR TENTH THE BEST EVER

The annual clinical and scientific conference of The Association for Physical and Mental Rehabilitation this year marks the tenth anniversary of the founding of the organization by a group of corrective therapists who were attending a special course of instruction at the Winter VA Hospital in Topeka, Kansas in October, 1946. How the organization and the profession of corrective therapy grew simultaneously from this modest beginning is well known and scarcely bears repetition here. However, it is fitting that what is actually our first significant anniversary be appropriately celebrated. The most logical way to mark it would be for a large and enthusiastic gathering to meet at the convention site in Augusta, Ga., during the last week of June.

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The annual convention is in no sense a sectional affair and although our confreres in Georgia will be supporting it 100%, they cannot carry the burden alone. It is up to the member in New York, in Illinois, in California-in every area-to personally attend this important meeting. To keep abreast of current developments in one's profession, to confer with one's colleagues, to renew old acquaintances and make new friends, to participate in the national election of officers-these are only a few of the reasons why one should attend the annual meeting of one's professional group. Keep in mind that Augusta, scene of the famed Masters golf tournament, is one of the South's most publicized resorts and accommodations at the Bon Air offer the finest in recreational facilities. It is an ideal spot for providing the family with a vacation while Dad attends the convention. This year, let's go all out to make our tenth the best ever!

# Book Reviews

"Essentials of Biological and Medical Physics," by Ralph W. Stacy, David T. Williams, Ralph E. Worden and Rex. O. Mc-Morris. (New York: McGraw-Hill Book Company, Inc., 1955. 586 pp. \$8.50).

This is the finest book on the subject of biological and medical physics that has ever come to the attention of the reviewer. The chapters on "Biophysics of Muscle," "Mechical Engineering of the Body" and "Medical Aspects of Musculoskeletal Engineering" should be required study for every corrective therapist; in fact the whole section on "Mechanical Biophysical Systems" is of great importance. If exercise is ever to be put on a scientific basis, this is the sort of material upon which it must rest. Physical therapists particularly will profit from reading the chapters on ultrasonics, light as a therapeutic tool and electrodiagnosis. In their discussion of the clinical aspects of musculoskeleletal engin-eering, the author states flatly that "most therapeutic measures are based on trial and error," and that the field "is open for well-planned, carefully controlled research." These are facts well known to every one connected with physical medicine and rehabilitation. We cannot even say positively what type of exercise will give the most rapid gains in strength and hypertrophy, or how the various progressive resistance exercises compare in their physiological demands, although these are questions comparatively simple to answer and of great practical importance. The chapter on "Application of G-Forces to Living Materials" leaves the reader wondering about the effect of physical fitness on ability to withstand G. The work done by Wessel and others in this field does not seem to have come to the attention of the authors. Inevitably, there are a good deal of mathematics in such a text. These are set forth principally in the form of equations. The presentation is excellent, but it is probably fortunate that most therapists will never be required to use them. Each chapter is followed by a few selected references. Occasionally a term should have been defined; at what point, for instance, does a muscle become "overdeveloped?" The phrase "progressive repetitive exercise" may be more technically correct, but it seems too awkward to ever become popular as a substitute for "single progressive system." Essentials of Biological and Medical Physics should not only be in every corrective therapy library, but should be required study. PJR

"Scientific Foundations of Physical Education," by Charles C. Cowell. (New York: Harper & Brothers, 1953. 257 pp. \$3.50).

Like Daniels' Adapted Physical Education, reviewed here in the May-June, 1955 issue, this is one of the series in Health, Education, Physical Education and Recreation prepared under the editorship of Delbert Oberteuffer. It is designed to be used as a text in graduate courses planned to stress problem solving in the field of physical education, and the biological and social forces underlying American physical education are considered at length. The author stresses that on the playground race, religion and social status are unimportant; it is the individual's skill and team spirit that count. This may very well be true for the outstanding athlete, but no evidence is presented to indicate that it is equally true for the great majority of individuals, whose athletic experiences are confined to the physical education class. Neither does the writer present evidence that the attitudes learned on the field are actually carried over into life off the field. LaPorte used to say that the important thing was not whether a boy displayed teamplay with the football squad but whether he took this attitude home and displayed it by helping his mother and sister with the dishes. This seems to us to be the crux of the matter. Physical educators appear fond of assuming that this carryover actually occurs without presenting evidence to justify their assumption.

In our review of The Imprisoned Splendour it was suggested that part of corrective therapy's problems were due to the fact that its place in the healing arts has not been satisfactorily defined. It is legitimate to ask whether Scientific Foundations of Physical Education suggests a solution for this problem. The answer is in the affirmative. Cowell contends that physical activity is not an end in itself, but a means whereby people achieve goals. Physical education cannot change people's basic drives, but it can channel them into activities which enable human beings to solve some of their problems. Attainment of goals approved by one's colleagues help an individual achieve inner homeostasis. An aim of physical education is to develop individuals capable of self-direction and to teach understandings which the idividual may use to modify his behavior. To our mind this is the area of corrective therapy's unique contribution to medical treatment. No other form of therapy offers these same satisfactions for the patient; certainly work details and similar activities usually prove incapable of providing the necessary emotional adjustment for the patient.

Cowell has written an excellent text. It will be of interest to every corrective therapist and physical educator who is concerned with something more than mere physical

activity.

PJR

"The Human Figure in Motion," by Eadweard Muybridge. (New York: Dover Publications, Inc., 1955, \$10.00).

In 1883 the University of Pennsylvania decided to sponsor Muybridge in a series of photographic studies of animals in motion, particularly humans. Three batteries of cameras were employed, so that the individual was simultaneously photographed from in front, behind and one side. Some 100,000 negatives were thus secured. In 1887 the University issued 11 volumes of the pictures, priced at \$500. The present work contains 196 human studies selected from the original edition. Most of these are photographs of nude men and women engaged in athletics or work. A few pictures of children are included; one particularly interesting series shows a legless boy climbing on and off a chair. The photographs are presented in sequence form so that the reader is given the appearance of the individual at several consectutive intervals from the beginning to the end of a specific action. The body is thus represented during the movements and stresses of a natural action, rather than in a succession of posed positions. The greatest value of the album will be in furnishing artists with material necessary to insure correctness of illustrations. The book will, however, also be of interest to kinesiologists and orthopaedic sur-

PJR

"Symposium on Problems of Gerontology." (New York: The National Vitamin Foundation, Inc., 1954. 141 pp. Paper bound. \$2.50).

This is the proceedings of a symposium on aging held under the auspices of Johns Hopkins University on March 2, 1954. Shock stated that the ultimate goal of research in aging is to determine why cells lose their ability to maintain their existence. Lansing suggested that aging begins as soon active growth ceases. Why this should be so constitutes the substance of the majority of the following talks. More questions are raised than are answered. The reader will find that little is known about the effects of aging on fat metabolism, that is not clear whether the endocrine changes of aging alter protein metabolism or are themselves affected by protein undernutrition, that the clinical significance of supplementary feeding of B12 has not yet been ascertained, etc. Those looking for a key to rejuvenation or through "health foods" or other dietary means will be disappointed the principal recommendation seems to be to avoid obesity. Those who are interested in learning in what areas searches are being made for such a key will find this symposium rewarding reading.

# "Free and Unequal," by Roger J. Williams. (Austin: University of Texas Press, 1953. 177 pp. \$3.50).

It is Williams' thesis that hereditary factors make each individual different from every other. Men simply cannot be regimented. From this he draws the comforting conclusion that totalizarian regimes must inevitably fail because they are based on false premises regarding the power of conditioning. He insists tht we must think of specific men and avoid generalizations about man; unfortunately this leads him into some generalizations about military duties (p. 82), racial differences (p. 124), and other subjects. No Christian would concede that belonging to a church is meaningless unless some are excluded (p. 122). To say that individuals can be compared only with regard to specific items does not justify the conclusion that there are neither "superior" nor "inferior" races—it simply provides a means of defining a "superior" race as one possessing the greatest percentage of individuals with "superior" items. To place the similarities of homozygous twns on a purely hereditary basis (p. 52) is to ignore the fact that they generally have identical environments. The therapist, corrective physical educator, coach or trainer who reads this Journal has in all probability been thoroughly indoctrinated in the "psychology of individual differences." Much of what Williams has to say may seem to him to be belaboring the obvious. Nevertheless, the book is full of fascinating information on how we differ (although the scholar may protest the complete lack of documentation) and is eminently readable. We need to be reminded of the things he has to say, and it is a pleasure to have them said so well and with such a complete absence of jargon, Free and Unequal is highly recommended reading both for what it has to say and the manner in which it says it. PJR

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# "An Inventory of Social and Economic Research in Health," compiled by Frederick R. Strunk. (New York: Health Information Foundation, 1955. 267 pp.).

This Inventory contains data regarding 398 research projects whose primary focus is "health or health related problems in the social sciences." Usually the Nature of the Problem, Geographic Area, Data and Analysis, Project Staff, Financial Sponsors, Cooperating Agencies and Duration of the Project are listed, although in several instances this information has not been made available by those responsible for furnishing it.. The text is divided into seven sections: measurement of health levels, mental health, cultural data, administrative problems, health services, personnel, and costs of medical care. There are five indices: subject, research organizations, project personnel, geographic areas, sponsors, and other sources of information. Anyone who wants to know "who is doing what" in the field of health research should find this a remarkably convenient source of information.

PJR

"Statistical Methods in Experimentation," by Oliver L. Lacey. (New York: The MacMillan Company, 1953. 249 pp. \$4.50.)

Regular readers of this Journal will have noticed that little actual research in Corrective Therapy has been published, and that even this small amount has almost never been subjected to proper statistical treatment. Yet it is precisely by the use of statistically significant studies that Corrective Therapists must demonstrate their right to be accepted into the corpus of scientific medical treatment. Probably this situation exists because statistics appears a fearsome subject to those who, like this reviewer, are not mathematically inclined. To any such readers this reviewer recommends Statistical Methods in Experimentation. Here is a book which fulfills its stated purpose of teaching the student "how to answer questions by way of an experiment." Several chapters dealing with the design of experiments provide the information which should be known before a therapist even attempts to set up a research study. The use of such recognized techniques as the standard deviation, null hypothesis, Chi square, product moment and regression is explained as simply as is possible. Detailed examples and typical problems follow each chapter. Only in one or two places does the presentation of the underlying theory require a grasp of higher mathematics. Only two criticisms are offered: First, the writer does not provide examples of the grouping of data, a procedure which is necessary if more than a few subjects are used. Second, there is no explanation of the Critical Ratio, which, although largely replaced by the use of Student's t, is still encountered. Elimination of the superfluous summaries at the end of each chapter would enable these points to be covered with very little or no increase in the size of the book. For the novice in experimental design and its statistical computations, this is the finest book that the reviewer has ever seen. It is highly recommended to those having need of such a text.

PJR

# "Psychoanalysis Today," by Agostino Gemilli (New York: P. J. Kenedy & Sons, 1955, 153 pp.)

This is a translation from the Italian of a book by an author who is at once a Franciscan priest, a psychologist, a doctor and a surgeon. The dust cover terms it "A Catholic Approach" and it is approved by the Archbishop of Boston. The first third of the text is devoted to a study of Freud, who is given credit for certain scientific innovations but whose system of psychoanalysis is rejected on the basis that it succeeds only by freezing the patient from all moral and social responsibility. The second one-third analyzes the welter of Jung's thought and pronounces it incoherent. The last third summarizes and discusses statements made by Pope Pius XII in regard to psychotherapy. These deal mainly with its moral aspects. Gemelli reveals an encyclopaedic knowledge of his subject and his criticisms of Freud and Jung seem largely justified, but it is not clear who will enjoy this little book. Laymen will find it confusing. Students will object to its lack of citation even for direct quotations and its tendency to make sweeping judgments without presenting the evidence to justify them. Psychologists will reject its opinion that only medical specialists should do psychotherapy. Therapists employed in N.P. hospitals will find it offers nothing to increase their professional competence. Churchmen are called upon to reject modern thinking and take their stand on Aristotlian-Thomistic philosophy, a position whose weakness has already been indicated by Northrup. At any rate it should start some vigorous arguments.

#### Michael Reese Hospital Medical Research Institute 26th Annual Report. Chicago. 35 pp. Free.

This reports the research projects conducted at Michael Reese Hospital during 1954. A list of publications is included. No work was done in Physical Medicine and Rehabilitation, but corrective therapists will find much of interest in the report of the Department of Metabolic and Endocrine Research.

PJR

"Fitness for Games," by F. A. Hornibrook. (London: Research Books Ltd. 39 pp. 35c).

This booklet is written by a layman for the weekend athlete. In part it is a catechism containing such questions as "What is the best way to treat chillblains?" and "Is night air harmful?"; in part it consists of advice about exercising for health, sleep, footwear, etc. Professional readers may look askance at such statements as "a youngster . . . should practice breathing exercises daily to oxygenate his blood . ."

"Symposium on Posture," (Available from Mrs. W. D. Miller, Exec. Secy., Phi Delta Pi, R.D. 1, Box 191, Huntington Valley, Pa., 75c).

In this rather old booklet Phi Delta Pi, National Professional Physical Education Fraternity for Women, offers a symposium on posture. Josephine Rathbone, George T. Stafford, Charles Leroy Lowman and others served as discussants. Naturally there is some variation in opinion, but in general they appear to agree that posture is strongly affected by the student's emotional tone. It reflects his or her thinking about their own body-image. Corrective exercises will prove unavailing unless the emotional-intellectual substrate is altered so that more desirable habit patterns result. A lengthy bibliography forms a valuable addition to the booklet. The material needs to be brought up to date but will prove interesting to those interested in the problems of posture and its correction.

PJ

PJR

"The Imprisoned Splendour," by Raynor C. Johnson. (New York: Harper & Brothers, 1953, 424 pp. \$5.00).

Herein the Master of Queen's College, University of Melbourne has applied a keen mind, a vast amount of reading, much insight and a faculty for clear writing to one of the most important and difficult problems of our time—the integration of science, physical research and mysticism into a coherent philosophy. Inevitably there are some gaps—it is strange to find no reference to Bond's important books in the section on physical research, or to Summers' learned treatise in the section on mysticism.

He ends with what is substantially Berkeley's position. This creates difficulties for the readers, especially those with medical backgrounds. Christian Science represents an attempt to put Berkeley's philosophy into practice as a healing art today, although Johnson looks forward to a time when clairvoyant diagnosis will replace physical diagnosis, when mental healing will be done by telepathy and somatic healing by psychokinesis. But Hume long ago exposed the devastating weakness in the Berkelian position: if nothing has meaning except sense data, then mind becomes simply an association of sense data. There must be something basically wrong in a philosophical theory that thus leads to its own destruction, but Johnson does not deal with this problem. Thereby he fails to do justice to the realists' position, nor does his implied acceptance of certain statements which are unsupported by proper evidence accord with his scientific training.

However, when he points out that in the Western world action has become a habit-forming drug, an end in itself, one cannot help but feel that he is talking directly to both physical educators and corrective therapists. Are not the disquieting conflicts apparent in physical education today largely the result of a failure to agree upon just what its role should be in a culture which is becoming increasingly less dependent on muscular effort? Are not many of the problems of corrective therapists a reflection of their inability to define satisfactorily their role among the healing arts?

This is a thought-provoking book, one to be read slowly and carefully. Those who have been "drugged with action" and are unaware of the field which he explores will find it an excellent introduction to the subject. Even for those who disagree with his conclusions, reading it is a rewarding experience.

"The Search for Bridey Murphy," by Morey Bernstein. (Garden City: Doubleday & Company, Inc., 1956, 256 pp. \$3.75)

The theory of metempsychosis has been generally rejected in the Occident, largely, perhaps, because the orthodox Christian churches have accepted the Thomistic teaching of one soul and one body. Nevertheless, it has been favored by Plato, Hume and Schopenhauer, among others, and is a matter of common belief in the Orient. It is evident that if it could be proven, it would revolutionize our ideas of philosophy, religion and therapy. The fact that this subject has recently enjoyed a revival of interest in the United States is due primarily to this book, in which a Denver hypnotist claims that under hypnotic influence one of his subjects, a Mrs. Ruth Simmons, was able to recall a previous life in Ireland as Bridey Murphy. In view of the popular interest in the book, the reviewer regrets to say that the sophisticated reader will find it disappointing. About half of the material is devoted to a presentation of familiar themes in hypnotism and reincarnation. The balance of the book concerns the author's work with Mrs. Simmons. The subject was questioned on her alleged previous life on only six occasions. The questions asked were extremely repetitious and the quantity of verifiable information elicited was quite small. Apparently no study was made of her history in order to determine whether this information could have been acquired through purely normal channels. The actual research done to verify her tale was surprisingly superficial. It was not even established that such persons as Bridey Murphy and her husband had existed. The overall impression left by the book is that the author has allowed his editor to rush it into print much too soon. The time may come when psychotherapists will routinely explore a person's memories of his "previous life", but it is not likely to be during our generation. This book may contribute to the study of the problem by promoting general interest in the subject, but it has little to offer towards its solution. The thoughtful reader can only return the unsatisfactory Scot's verdict of "Not Proved" and await later developments with an open mind.

PJR

"From Custodial to Therapeutic Patient Care in Mental Hospitals," (New York: Russell Sage Foundation, 1955, 497 pp. \$5.00).

This book is an historical survey of the practices of patient treatment in three New England Mental Hospitals: Boston Psychopathic Hospital, Metropolitan State Hospital and Bedford V.A. Hospital. The study describes the change of philosophy of the purpose and administration of the psychiatric hospital. It emphasizes the gradual trend towards the breaking down of barriers between the administrators and other personnel with direction towards a team approach and "utilization of every form of treatment available for restoring patients to health." In America, this philosophy is largely attributed to Dr. Karl Menninger, who has said that "even the person who swept the floor might be the very one who was able to give a particular patient the kind of psychological held needed." In the section dealing with the Bedford VA Hospital, Dr. York gives an excellent definition of the aims and objectives of the Physical Medicine and Rehabilitation Department:

The general objective of all sections is the same, but the units differ in specialized techniques and media through which they work with the patient. The predominant goal of these therapies is socialization or resocialization: helping patients develop self-esteem and personal expression, with mastery of those social skills required for a more mature, satisfying life in society.

The author also makes a number of references to the fine work being performed by the corrective thrapists at this hospital. This book is highly recommended for reading by all psychiatric hospital personnel, from the administrators to the aides.

HJB

"Medical and Psychological Teamwork in the Care of the Chronically III," Edited by Molly Harrower. (Illinois: Charles C. Thomas, 1955, 232 pp. \$5.75).

The book is a compilation of about forty short reports and discussions taken from a conference held cooperatively

by the Josiah Macy, Jr. Foundation and The University of Texas Medical Branch in Galveston, Texas. The participants in the conference were taken from the professional ranks of internists, psychiatrists and clinical psychologists. The primary emphasis, although basically originating as the role the clinical psychologist can play in this team situation, has a wealth of information in many aspects of working with the chronically ill.

The general topics concerning the patients include the care and treatment and psychological problems of the chronically ill. The area of the conference dealing with the personnel involved consisted of the problems of teamwork, teaching and training personnel, interdisciplinary research

and communication.

Many fine ideas are brought out through the numerous reports, but because of the brevity of each subject, the authors are hardly able to get into the real "meat" of the material.

HJB

# "Music Therapy" by Dr. Edward Podolsky. (New York: Philosophical Library, 1954. 335 pp. \$6.00).

Dr. Podolsky has compiled over thirty articles dealing with various aspects of Music Therapy. These articles are basically case studies wherein music was designated as the primary therapeutic modality in aiding the patient. The authors attempt to point out how music has been used with cases of depression, anger emotional fatigue, psychosis, anxiety, psychopathic personality, psychosomatic gastric disorders, etc., as well as an adjunct to electric shock and surgery. The last article attempts to evaluate and point out the limitations of research in the area of music therapy

This book is a very readable and interesting account of the many areas in which music has played an important role in patient treatment. It also provides an extensive source of bibliographic material which is invaluable for therapists interested in making further studies on the pros

and cons of music as a therapeutic agent.

HIB

## "Psychology, the Nurse and the Patient," by Doris M. Odlum. (New York: Philosophical Library, 1954. 166 pp.)

Dr. Odlum is a psychiatrist and a consultant psychotherapist in London. Her book parallels in content some of the nursing texts recently published in this country. The simple direct language with which she presents human behavior is unequalled. For example, she groups patients into two classes: tough or tender. By English standards, the book covers the psychological requirements of the State Registration Examinations. In this country it would serve to orient the student nurse prior to her psychiatric affiliation, but would be inadequate as the basic text for a course in psychiatric nursing. Dr. Odlum's presentation of the "total" patient is most convincing and it would seem the book might be appropriately called a nursing primer.

GT

# "Muscular Contraction," by M. Dubuisson, (Springfield: Charles C. Thomas Publisher, 1954, 243 pp. \$6.50).

The material in this book is similar in form to that which appears in Physiological Reviews. The author has summarized the literature bearing upon two questions: What do we know about the chemical composition of mus-cle? and What do we know about what happens when a muscle shortens and relaxes? He reaches the somewhat disappointing conclusion that at the present time too little is known about the physico-chemical aspects and the properties of the muscle constituents to permit us to advance a general view of the mechanism of muscular contraction. Nearly a quarter of the book is composed of the bibliographic references. The first half of the text will be of interest primarily to those with training in biochemistry; the second half deals with mechanical changes, thermal changes, volume changes and other physical alterations which take place when a muscle contracts or relaxes. This is a convenient summary of material which is of great importance to any therapist who desires to have more than a superficial knowledge of muscle physiology. The book is recommended to every serious student of the subject.

PJR

# Chapter Activities

#### Middle Atlantic Chapter

The Middle Atlantic Chapter (Central District) held a clinical session on March 17 at the Veterans Administration Hospital at Wilmington, Del. The program centered about the problem of the amputee and included presentations by Dr. F. E. Dugdale, Chief PMRS at Wilmington, who spoke on "Amputees and Problems Involved;" Dr. W. C. Edwards, orthopedist, whose topic was "Surgical Aspects of the Amputee and Dr. R. H. Price, former Chief of the NP Service at Wilmington who spoke on "Psychosomatic Medicine." Frank Delliquanti, Chief at Wilmington who has recently

Frank Delliquanti, Chief at Wilmington who has recently been appointed to the Governor's Council on Employment of the Handicapped, acted as chairman of the meeting.

#### Grand Canyon Chapter

Officers recently elected include:
President—Russell Neilson.
Vice President—Robert Barton.
Sec'y-Treas.—Jim Cushing.
Chairman, Membership Committee—Charles Tolliver.
Chairman, Educational Committee—Henry White, Bob
Kornick and Verl Wilde.
Editor, Newsletter—Nick Caputo.
Chairman, Legal Committee—Wallace Coleman.

#### California Chapter

The California chapter of APMR announces the results of the 1956 election of officers and appointed committee chairmen:

Officers

President: George Devins, 12591 Gilbert St., Garden Grove. Vice-President: Fred O'Banion, VAH, Brentwood, Los Angeles

Vice-President: Evangelo Gerontinos, Palo Alto.

Recording Secretary: Clifford H. Loose, California Inst. of Rehabilitation.

Corresponding Secretary: Stanley E. Marcil, Palo Alto. Richard C. Barr, Long Beach.

Committee Chairmen

Educational: Richard Fowler
Ways and Means: Joseph Tosches
Membership: Jack Grader
Free Clinic: Rudy Jahn
Publicity: Bernard Weber
Legislative: Murray Levitta

Program: Fred O'Banion Liaison: Dr. John Sellwood Research: Phil Rasch

The following subjects are under study by the chapter:

- 1. A Far Western Conference.
- 2. A workshop at one of the universities.
- Placing a representative on the Governor's Committee for Employment of the Physically Handicapped.
- To set up a permanent exhibit on Corrective Therapy.
- To cement relations with other groups, particularly those in Health and Physical Education.

#### **Certification Examination**

The first examination for certification in Corrective Therapy will be held during the last week of June in Augusta, Ga. All candidates are urged to contact Louis Mantovano, 37 Clinton Ave., Rockville Centre, N. Y., as soon as possible.

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# News and Comments

#### COMMUNITY PROGRAM AIDS READJUSTMENT

Many communities are going "all out" to help seriously disabled veteran-patients before and after discharge from Veterans Administration hospitals so they remain well following discharge and even become self-supporting again.

VA said this valuable community help, during the most critical period of the patient's discharge, is being extended to 23 VA hospitals, with more scheduled to join soon.

The program is known as "Planning for Patient Discharge." It is designed to make full use of community volunteer, social and health groups under a definite plan of assistance for each discharged patient who needs it to readjust to home and community life.

VA said the program has proved so successful thus far that it may be adopted eventually by all 173 hospitals in the VA system.

The agency explained that hospital participation is on a voluntary basis because of the need for considerable hospital initiative and preliminary personnel training to insure its successful operation.

The key to the program is the vast army of VA Voluntary Service (VAVS) workers who annually donate more than 5,000,000 hours of service to veterans in VA hospitals.

Under the new program, the volunteers are extending their help to discharged patients in their home communities as a continuation of their services while the patients were in the hospitals.

Once a plan of needed community assistance is drafted by the hospital staff's functional committee for a seriouslydisabled veteran about to be discharged, the VAVS through the hospital's steering committee helps to put it into effect.

This assistance may take the form of home nursing service, transportation to a community clinic, free medicines, widened bathroom doors to let in a wheelchair, materials for hobbies, friendly visits, a job the veteran can perform—in fact, almost anything he may need to live at home without losing the benefits of the medical care he has received in the hospital.

VA said the assistance even may take the form of special rehabilitation, such as getting together a group of hard-of-hearing people in one neighborhood so the deafened patient may learn lip-reading and thereby be encouraged to go to work at a job he can perform with his new skill.

Concerning the nature of the problems which the new program is attempting to solve in planning for patient discharge, Dr. Harry Kessler, coordinator of the program in VA central office at Washington, D. C. said:

"Most of the problems are of a relatively minor nature—few are dramatic—yet, we know how vitally important these seemingly unglamorous services of help can be to the individual patient and how greatly he comes to depend upon them in his struggle for community adjustment."

The 23 VA hospitals where the program is well under way are located at Aspinwall, Pa.; the Pittsburgh general medical and surgical hospital; Wilkes-Barre, Pa; East Orange, N. J.; Fort Howard, Md.; Cleveland, O.; Richmond, Va.; Albany, N. Y.; Nashville, Tenn.; Muskogee, Okla.; Wood, Wisc.; Long Beach, Calif.; Lyons, N. J.; Indianapolis, Ind.; Clarksburg, W. Va.; Kecoughtan, Va.; Matinsburg, W. Va.; San Juan, P.R.; Louisville, Ky.; Marion, Ind.; Butler, Pa.; Fort Thomas, Ky.; and Philadelphia, Pa.

#### AART CONVENTION

The seventh annual clinical and scientific conference of the American Association of Rehabilitation Therapists will be held at the Lafayette Hotel, Long Beach, Calif., on June 18-22, 1956.

#### SCHOLARSHIPS

This is the "Second Annual Drive" for scholarship funds sponsored by the Association for Physical and Mental Rehabilitation. This organization is composed of therapists serving the disabled. Scholarships are an important phase of democracy in action, because they enable young men to receive a first quality education regardless of their financial means.

Here is an opportunity for every member to display his sincerity for this democratic ideal. Your contribution means growth to your professional organization, to your knowledge, and a continued service to the disabled.

The following is a list of the fund raising committee. This *Journal* will publish the amount of donations received by each of these individuals with each issue of the *Journal*. May 15, 1956 is the deadline so let's all <code>get</code> behind this drive and promote the scholarship fund.

Gentlemen remember that "He cried because he had no shoes, until he saw the man who had no feet." Give and promote your interest.

The following individuals have been selected as area and local representatives to solicit funds for the scholarship program:

Raymer, Earl, Cleveland, Ohio Bader, Charles, Augusta, Maine Neiheisel, Walter, Denver, Colorado Krebs, Robert, Milwaukee, Wisconsin Nilson, Raymond, Bedford, Massachusetts Osgood, Edmund, Knoxville, Iowa Marusak, Francis, Perry Point, Maryland Levitta, Murray, N. Hollywood, California Kil, Henry, Albuquerque, New Mexico Hussey, Lou, Tuscaloosa, Alabama Ishmael, Charles, Coral Gables, Florida Huskey, Freeman, Columbia, South Carolina Frazier, Louis, Memphis, Tennessee Allen, George, McKinney, Texas Beck, Paul, Augusta, Georgia Daniel, Lester, Richmond, Virginia Dickson, Sloan, Little Rock, Arkansas McIntyre, Robert, Salisbury, North Carolina Bailey, Lowell, Tucson, Arizona Zive, Simon, Reno, Nevada Kreick, Raymond, Battle Creek, Michigan Zimmer, Howard, Lincoln, Nebraska Basan, Harry, Indianapolis, Indiana Zachary, Burr, Santa Monica, California Billing, Osborne, St. Cloud, Minnesota Yarosh, Michael, Wilkes Barre, Pennsylvania Wood, Harland, Salt Lake City, Utah Kramer, Robert, Sheridan, Wyoming Wettstein, Hyman, New York, New York Watson, Jack, Alexandria, Louisiana Braithwaite, Willard, Berkley Springs, West Virginia Sousa, Louis, American Lake, Washington Mason, Earl, Louisville, Kentucky Roland, Paul, Chillicothe, Ohio Bradley, Harry, Ft. Meade, South Dakota Potthast, William, Fargo, North Dakota Purcell, Carl, Chicago, Illinois

Reports should be submitted as soon as possible to the Chairman, Scholarship Fund, Arthur D. Tauber.

#### NEW STATISTICS ON VETERANS

The average age of Uncle Sam's more than 22 million living veterans now is  $38\frac{1}{2}$  years.

Veterans Administration said the extremes range from 109 for the oldest veteran to under 18 for the youngest.

The oldest veteran on VA rolls is Albert Woolson, of Duluth, Minn., the lone Union Army Veteran of the Civil War who is celebrating his 109th birthday today, (February 11, 1956). Woolson, a drummer boy in the Nashville campaign, is the only survivor of 2,213,000 men who fought for the Union cause. There were 364,000 Union Army deaths in service.

The youngest group of veterans, those under 20 years who served during the Korean conflict period, number 34,-

000. There were only 4,000 veterans who are 85 or over.

The largest group of veterans, mostly those of World War II, fall within the 30 to 34 age bracket. That group numbers approximately 5,158,000. The next largest group, approximately 4,081,000, is in the 35 to 39 age bracket.

Based on a VA survey as of December 31, 1955, following is a breakdown by war showing the number of participants, number of deaths in service, estimated number of living veterans and their average age:

Korean Conflict Period—6,807,000 participants (includes 1,476,000 who served both in World War II and during Korean Conflict period); 54,000 deaths in service; 4,346,000 living veterans (includes 843,000 who served both in World War II and during Korean Conflict period); average age 27 years.

World War II—16,535,000 participants (includes 1,476,000 who served in World War II and during Korean Conflict period); 409,000 deaths in service; 15,391,000 living veterans (includes 843,000 who served both in World War II and during Korean Conflict period);  $36\frac{1}{2}$  years.

World War I—4,744,000 participants; 131,000 deaths in service; 3,105,000 living veterans; 62 years.

Spanish-American War — 392,000 participants; 11,000 deaths in service; 68,000 living veterans;  $78\frac{1}{2}$  years.

Indian Wars—106,000 participants; 1,000 deaths in service, 176 living veterans; 89 years.

VA said 31,800,000 persons participated in all wars, including the Revolutionary War.

#### THREE LASKER AWARDS IN 1957

The International Society for the Welfare of Cripples and the Albert and Mary Lasker Foundation has announced that three Albert Lasker Awards for outstanding achievement in the development of services for the physically disabled will be presented at the Seventh World Congress of the International Society in London on July 24, 1957.

The Awards, which are made by the Foundation through the International Society every third year, consists of \$1000 each and a silver statuette of the Winged Victory of Samothrace. Their purpose is to emphasize, through the recognition of individual and group accomplishments which are internationally significant, the importance of developing improved services for the disabled persons of the world.

An international committee of experts will select the recipients from nominees proposed by affiliated national organizations of the Society and other organizations carrying out programs for the disabled in various countries. Dr. Henry H. Kessler, Director of The Kessler Institute for Rehabilitation, will be chairman of the Lasker Awards Committee, Secretary General Donald V. Wilson of the International Society announced.

The Lasker Awards Committee will also include: Dr. Gudmund Harlem, Minister for Health and Social Affairs of Norway; Dr. Jose I. Tarafa, Director of the Franklin D. Roosevelt Rehabilitation Centre, Havana, Cuba; Mr. Jean Regniers, Director, Association Nationale d'Assistance aux Enfants Estropies, Charleroi, Belgium; and Miss Joan Tuxen, National Secretary, Australian Advisory Council for the Physically Handicapped, Melbourne, Australia.

the Physically Handicapped, Melbourne, Australia. The International Society for the Welfare of Cripples is a federation of national organizations in thirty countries and is devoted to international cooperation in the development of services for the rehabilitation of handicapped persons. Through its headquarters in New York, the Society serves as a coordinating body for the exchange among nations of information and assistance in this field. The World Congresses of the International Society, which convene each third year, are the principal international conferences for the discussion by experts from all parts of the world of all the problems of disability and of activities to provide medical, social, educational and vocational assistance to the handicapped.

The Albert and Mary Lasker Fundation established the annual Albert Lasker Awards in 1944 to honor and encourage outstanding achievement in medical research and public health administration. The Foundation also makes grants in the field of medical research and public health. The Winged Victory statuettes presented by the Foundation to scientist winners symbolize in this instance, victory over death and disease. They are considered among the nation's highest medical honors. Eight scientist winners have later received Nobel Prizes.

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## SCIENTIST MEASURES REACTION TIMES OF THE BROOKLYN DODGERS

During their recent spring training at Vero Beach, Fla., a group of baseball stars representing the world champion Brooklyn Dodgers were given a battery of tests of their reaction times by Dr. Creighton Hale, Springfield College physiologist and research director for Little League Baseball.

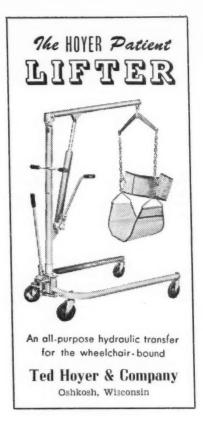
In one test, a timing device measured the interval between the turning on of an electric light and the time it took a player's hand to move toward a baseball placed nearby. Another test measured the time it took the player's hand to actually reach the ball. A third experiment involved the use of a platform on which the player stood, raising one foot when a light was turned on. The tests are designed to measure reaction time, hand speed and the ability to break into a run from a standing position. Duke Snider, star center fielder for the Brooks, was reported to have scored highest in reaction time with a clocking time of .19 seconds which was only .01 seconds slower than the best time ever recorded by Dr. Hale. In hand speed, Don Zimmer placed highest while the veteran Jackie Robinson was the best of the Dodgers in the matter of starting ability according to the tests.

#### CHRONIC ILLNESS COMMISSION DISBANDS

The Commission on Chronic Illness, a temporary organization founded by the American Hospital Association, American Medical Association, Public Health Association and American Public Welfare Association, will terminate its activities as an incorporated organization on June 16.

During its seven year history, the commission, located in Baltimore, was dedicated toward making a concerted attack on the problems of chronic illness. Among its major projects included a study of the prevalence of chronic illness and the needs for care of the chronically ill in an urban and rural area, a study of 12 home care programs and a study of the characteristics of patients requiring long-term care in institutions.

The work of the commission will in the future be continued by the founding organizations and other permanent agencies concerned with the problem. Publication of the *Chronic Illness News Letter* will be continued by the Council on Medical Service of the American Medical Association.



#### SELECTED ANNOTATED BIBLIOGRAPHY

#### PHYSICAL THERAPY-RECORDS

Dempsey, Mary W. (V.A. Hosp., Boston, Mass.)

Physical therapy records. Phys. Therapy Rev. July, 1955. 35:7:377-379.

Describes a timesaving method for reporting daily totals of treatments and number of patients treated. The system uses a master chart for which monthly and annual reports can be obtained easily from the daily entries which are written with a wax pencil on the glass covering the chart. Pencil marks are easily erased so that the chart can be used indefinitely.

#### PHYSICAL THERAPY-PERSONNEL

American Physical Therapy Association

State registration of physical therapists. Phys. Therapy Rev. Aug., 1955. 35:8:438-443.

Requirements for legal licensing or registration of physical therapists as provided by state law are listed by state. Similar legislation when enacted by additional states will be reported in the Physical Therapy Review.

#### PLAY THERAPY

Lorenze, Edward J. (The Burke Foundation, White Plains, N. Y.)

Role of non-directive play therapy as a technic of psychotherapy in cerebral palsy, by Edward J. Lorenze and Ralph Cancro. Arch. Phys. Med. and Rehab. Aug., 1955. 36:8:523-529.

Parental attitudes which may lead to emotional maladjustment in the cerebral palsied child are considered. Ten children considered to have psychological problems resulting in specific behavior problems of speech retardation were placed on a program of play therapy; results and findings of a follow-up evaluation are discussed. The authors believe that emotional problems in cerebral palsied children are found with sufficient frequency to warrant the inclusion of psychological services as a part of the therapeutic program. Such services should include not only testing and evaluation, but actual therapy, guidance and parental counseling if they are to be effective.

#### POLIOMYELITIS-MEDICAL TREATMENT

Knapp, Miland E. (920 S. 7th St., Minneapolis, Minn.)

The contribution of Sister Elizabeth Kenny to the treatment of poliomyelitis. Arch. Phys. Med. and Rehab. Aug., 1955, 36:8:510-517.

An objective evaluation of three important contributions to the treatment of poliomyelitis which Sister Kenny made. She emphasized muscle shortening as a cause of deformity, stressing the need for positive treatment in the early stages to prevent deformity. Sister Kenny emphasized a positive approach to treatment, with attention to the things which can be treated with hope of success, and she systematized a technic of muscle re-education based on sound physiologic principles and logical reasoning.

#### REHABILITATION

Elman, Robert (624 N. Grand Blvd., St. Louis, Mo.)

Medical responsibility in rehabilitation. Missouri Med. Aug., 1955. 52:8:615-617.

Medical aid is necessary in all cases undertaken by the rehabilitation program, in terms of examination. In about 35 per cent of the cases it is needed in terms of medical therapy. Medical aid is also helpful in vocational guidance and in job placement, but the writer believes the medical profession has lagged behind in assuming responsibility for this problem. Intimate participation by qualified physicians at all levels can help to expand the scope of rehabilitation.

Strong, George F. (925 W. Georgia St., Vancouver, B. C., Canada)

Rehabilitation. Canadian Med. Assn. J. Feb. 15, 1955. 72:4:247-252. Reprint.

Points out the change in status of physical medicine within the broadened concept of rehabilitation, the expanding need for rehabilitation services with the increase in life span, the social and economic value of rehabilitation, and discusses the work of the Rehabilitation Centre organized by the Western Society for Rehabilitation in Vancouver.

Switzer, Mary E. (Off. of Voc. Rehab., Washington 25, D. C.)

Neglected disability; a national problem. J. Natl. Med. Assn. July, 1955. 47:4:242-247.

The three greatest problems encountered in meeting the needs of the disabled are the serious lack of funds, facilities and professional personnel in sufficient amounts to give necessary services. Dr. Switzer discusses the Federal provisions in the new rehabilitation law and the closely related Medical Facilities Survey and Construction Act which will make available expanded services. The status of the Negro in regard to benefits from rehabilitation and medical services is considered.

United Nations, Technical Assistance Administration

United Nations European Seminar on the rehabilitation of the adult disabled; organized by the European Office of the . . . in cooperation with the Federal Executive Council of the Federal People's Republic of Yugoslavia, Belgrade. Belgrade, Federal People's Republic of Yugoslavia, 1955. 300 p. illus.

A seminar organized for the purpose of examining the technical problems involved in the setting up of a modern rehabilitation program based on the teamwork approach. The rehabilitation center established in Belgrade through the aid of the technical assistance program of the United Nations served as an example of what can be accomplished through the provision of expert advice, fellowship training and equipment. This publication covers lectures delivered during the course of the seminar on aspects of modern rehabilitation. Dr. Henry H. Kessler was appointed Director of the seminar; addresses by him appear on p. 23, 81, 175, and 205. A brief description of various institutions which were visited during the seminar is given in the appendix.

#### REHABILITATION

Elton, Frederic G. (28 E. 2-st St., New York, N. Y.)

Rehabilitation, the place and relationship of services. Bul., American Rehabilitation Committee. July, 1955. 4:1:1-7.

"It will be noted that the rehabilitation process, as explained calls for a continuous, uninterrupted and interlocked series of services necessary to meet the individual needs of each patient, directed towards returning each to economic and social life just as speedily as it is scientifically possible to do so. This process has three major parts,—Medical, Convalescent or Conditioning and Vocational . . ."—Author.

#### REHABILITATION-GREAT BRITAIN

Great Britain. Standing Committee on the Rehabilitation and Resettlement of Disabled Persons.

Services for the disabled. London, H. M. Stationery Off., 1955. 88 p. illus.

Presents a concise and factual account of provisions now made in Great Britain for the rehabilitation and resettlement of the disabled. A brief historical review of progress in rehabilitation work is given. Medical, employment, and other social services, as administered by governmental and voluntary agencies, are described. Special problems arising in the various categories of the disabled and their management are discussed. Included in the appendix are listings of organizations concerned with rehabilitation, sheltered employment, vocational training, and voluntary services for specific disabilities.

Certain of the reports prepared by other organizations for Committee review were indexed in the *Bulletin on Current Literature*, April, 1955, No. 403; Oct., 1954, No. 1062; and Sept., 1954, No. 982.

Available in U.S. from British Information Service, 30 Rockefeller Plaza, New York 20, N. Y., at 4s 6d (86c) a copy.

#### **SWIMMING**

Wolfin, A. A. (Vale Rd. School, Tottenham, Middlesex, England)

Swimming at the Vale Road Schools for Physically Handicapped Children. Special Schools J. June, 1955. 44:2:27, 30.

Describes the swimming program at the School, reactions of the handicapped child to the water, methods of teaching, and the ideal time to introduce the handicapped child to swimming instruction. A short pamphlet of suggestions on various approaches to swimming instruction has been compiled to aid those interested in teaching swimming to the physically handicapped.

(To be Continued)

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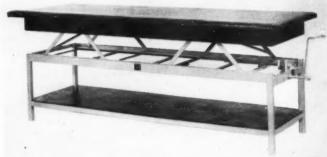
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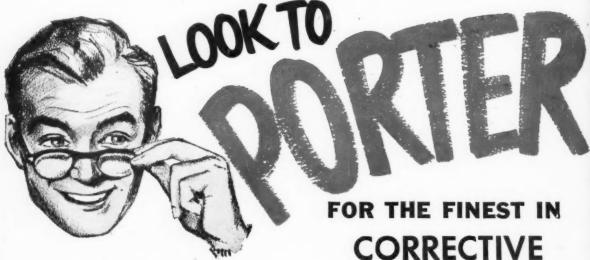
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